Centre for Resource Studies
Queen's University
Kingston, Ontario

Canadian Mineral Policy Formulation: A Case Study of the Adversarial Process

DAVID YUDELMAN

Working Paper No. 30

84- 3246 /

CANADIAN MINERAL POLICY FORMULATION: A CASE STUDY OF THE ADVERSARIAL PROCESS

by

David Yudelman

CENTRE FOR RESOURCE STUDIES
Working Paper No. 30
May 1984

Canadian Cataloguing in Publication Data

Yudelman, David
Canadian mineral policy formulation

(Working paper, ISSN 0226-7616; no. 30)
ISBN 0-88757-042-9

1. Mineral industries - Government policy - Canada.
2. Political planning - Canada - Case studies.
3. Industry and state - Canada. I. Queen's University (Kingston, Ontario). Centre for Resource Studies. II. Title. III. Series: Working paper (Queen's University (Kingston, Ontario). Centre for Resource Studies); no. 30.

HD9506.C22Y84 1984 333.8'515'0971 C84-098971-7

© ISBN 0-88757-042-9
Centre for Resource Studies, 1984
Queen's University

FOREWORD

The Mineral Policy Discussion Paper, released by Energy, Mines and Resources Canada in 1982, was a major event in the development of mineral policy in Canada. Following on earlier government initiatives, and preceded and followed by considerable interaction with the mineral industry, the publication provides an interesting case study of the adversarial process involved in mineral policy formulation. The author draws upon both the Discussion Paper and the response of industry representatives in this study to provide insight into the difficulties of developing mineral policy for Canada, the respective roles of government and industry in such a task, and the need for a comprehensive mineral policy in Canada.

The Centre is pleased to offer this work for information and discussion, in an attempt to encourage feedback to the author and further research into the formulation and content of Canadian mineral policy.

Opinions expressed are those of the author, and do not necessarily represent the views of the Centre or its sponsors.

Margot J. Wojciechowski
Centre for Resource Studies

SUMMARY

The recent debate between the Canadian federal government and the mining industry on the issue of mineral policy provides a revealing case study of policy formulation. It throws light both on the specific issues of Canadian mineral policy, and on the general process of Canadian policy formulation.

The federal government publication, Mineral Policy: A Discussion Paper, and the industry response to the Discussion Paper are dealt with in detail. The unpublished written representations by the industry are the prime sources for evaluating the response to the Discussion Paper. The Discussion Paper is summarized by chapter topics and the responses are similarly classified for convenience.

The introduction and conclusion provide the background to the Discussion Paper, extract themes, and draw some tentative conclusions from the debate. Policy-making, via such debates, emerges as an adversarial process. The term 'policy' itself is 'essentially contested' and its ambiguity sidetracks some of the debate. The major difficulties of formulating a coherent mineral policy emerge partially from the Canadian federal system, but it is shown that it is possible to learn from past experience, including the debate on the Discussion Paper.

In conclusion, the pervasive differences on what the proper role of government in the industry ought to be, and how its social and economic goals should be balanced, are highlighted and analyzed. The reasons why the industry should play a more pro-active part in the process of arriving at a coherent mineral policy are outlined. It is argued that government could avoid the pitfalls of reacting to each policy contingency as it arises by continually moving towards a clear hierachical list of priorities against which all its particular policy decisions can be evaluated.

RÉSUMÉ

Le récent débat entre le gouvernement fédéral canadien et l'industrie minière au sujet de la politique minérale fournit une étude de cas révélatrice en ce qui concerne la formulation de cette politique. Il éclaircit à la fois les problèmes spécifiques de la politique minérale canadienne et la processus général de la formulation de la politique canadienne.

On traite en détail d'un document que le gouvernement fédéral vient de publier, La Politique Minéral: Document de Travail, et de la réaction de l'industrie à ce document. Pour évaluer cette dernière, on s'est servi comme source principale des démarches écrites non publiées faites par l'industrie. Le document est résumé par sujets de chapitres et les réactions de l'industrie sont classées de la même façon par commodité.

L'introduction et la conclusion fournissent les données de base du document, en dégagent les thèmes et essayent de tirer quelques conclusions de ce débat. À travers de tels débats l'adoption d'une politique apparaît comme un processus apte à susciter de l'antagonisme. Le terme 'politique' est lui-même 'principalement contesté', et son ambiguité amène les participants à s'écarter du sujet un tant soit peu. Dans la formulation d'une politique minérale cohérente, les plus grandes difficultés proviennent en partie du système fédéral canadien, mais il est démontré qu'il est possible de tirer des leçons de l'expérience passée, y compris du débat.

En conclusion on souligne et on analyse les différences omniprésentes relatives au rôle que le gouvernement devrait jouer dans l'industrie et la manière dont il devrait équilibrer ses objectifs économiques et sociaux. On passe brièvement en revue les raisons pour lesquelles l'industrie devrait jouer un rôle plus actif et plus positif dans le processus de la formulation d'une politique minérale cohérente. En faisant face à chaque situation imprévue au fur et à mesure qu'elle se produit, le gouvernement tombe dans des traquenards dont on soutient ici qu'ils pourraient être évités si le gouvernement établissait graduellement une liste hiérarchique claire de priorités qui servirait de guide pour évaluer chaque décision individuelle en matière de formulation de politique.

CONTENTS

Foreword / iii

Summary / iv

Resume / v

1. Introduction / 1

   Background / 2

2. The Discussion Paper and its Critics / 6

   Preface and Background / 6
   Government Intervention / 9
   The Clash of Social and Economic Goals / 15
   Investment Climate / 16
   Resource Base and Security of Supply / 19
   Competitive Position / 21
   Taxation and Incentives / 25
   Foreign and Public Ownership / 28
   Infrastructure / 30
   Northern and Regional Development / 34
   Employment and the Quality of Working Life/ 38
   Environment / 39
   Further Processing / 42
   Mineral Machinery and Equipment / 45
   Mineral Science and Technology / 51
   International Marketing and Minerals / 53

3. Conclusion / 58

   The Meaning of 'Policy' / 58
   The Difficulties of Formulating Mineral Policy / 62
   The Role of Government / 64
   Social and Economic Goals / 65
   Policy Opportunities / 66

Appendix / 68

The Author / 69

The Centre for Resource Studies / 70

CRS Publications / 71

1. INTRODUCTION

This study examines the major 1982 federal government publication, *Mineral Policy: A Discussion Paper,*[1] and the mining industry's reaction to it. It examines the process as a case study in policy formulation, partially through adversarial procedures. Rather than being concerned with the details of what mineral policy should be, in other words, it focuses on a particular exercise in the process of arriving at mineral policy, and how it was viewed by the industry it affected. The objective is to provide a study of some use both to those concerned primarily with Canadian mining and to those interested in Canadian policy formulation.

The structure of this study is as follows. A background section provides a brief outline of the events that gave rise to the Discussion Paper.

The second and major chapter of this study records in some detail the published federal arguments and proposals, and the industry responses to them, both published and unpublished. It paraphrases and quotes extensively from these sources, with the major aim of providing a convenient and accessible record of a fascinating debate.[2] To avoid confusion, editorial comments in chapter 2 have been printed in italics, as far as possible; by and large, however, the protagonists have been allowed to speak for themselves.

The third and final section attempts an analysis of the debate as a case study in the policy-making process. It looks at some of the constraints on the policy makers, their perceptions of their role in the process, and the industry's perception of its role.

The concept of 'policy' is a notoriously difficult one. It is commonly used in at least two distinct senses. It may describe courses of action, as in 'our policy is to drive on the right'; or it may describe coherent sets of goals, objectives and priorities, as in 'our policy is to eliminate needless, wasteful and reprehensible loss of life. Traffic accidents are a major culprit, and they can be minimized by standardizing rules. One useful rule would be for everyone to drive on their right side of the road'.

---

1. Energy Mines and Resources Canada, Mineral Policy: A Discussion Paper, Report MP81-1E, (Ottawa: Supply and Services Canada, 1982).
2. Because the responses are drawn from a multiplicity of sources (including a few non-industry sources), more care is taken to cite exact references than was necessary in drawing from the Discussion Paper.

According to the former sense of 'policy', government policy can be regarded as anything the government does, regardless of whether its actions are consistent with each other or even whether they display any coherence whatever. Both senses of the word are legitimate and difficult to avoid, but it is confusing and dangerous systematically to conflate the two.

The analysis contained in the third section of this study attempts to point out how both the Discussion Paper and the reactions to it are led astray by a pervasive ambiguity about the meaning of 'policy'. Thus, although no specific 'Mineral Policy' or 'mineral policies' are advocated, a more rigorous separation of the two is held to be crucial to coherent and rational planning for Canada's mining industry. A presupposition of the analysis is that the goal of the policy-making exercise in which the Discussion Paper and its critics have been engaged should be a strategic policy for the mining industry, however flexible, rather than an undifferentiated list of issues of concern.

Background

The Discussion Paper came at the end of a decade of a time-consuming search for a comprehensive Canadian mineral policy. The quest for a mineral policy is an extremely important topic in itself, and there are a number of valuable lessons which policy-makers and analysts today can learn from that frustrating experience.[3] Here it is merely proposed to provide the immediate context.

In September 1980, a federal Cabinet meeting at Lake Louise ordered the 'resource departments', Agriculture, Fisheries, Forestry, and Energy, Mines and Resources (EMR), to prepare strategic overviews to help the government in one of its major new economic strategies: development of natural resources and their industrial potential. Guidelines for the studies were set out by the Ministry of State for Economic Development in December 1980.

EMR was asked to deal with the mining industry only, as it was felt that the National Energy Program and allied events had already put a fully-developed energy strategy into place.

---

3. It is the subject of a forthcoming Centre for Resource Studies publication.

A preliminary 373-page internal document, titled the Mineral Policy Review, was produced by July 1981. This document was largely prepared by EMR's Economic and Financial Analysis Branch, rather than its Mineral Policy Branch. Led by Harry Baumann, and working under great pressure, individuals in the team produced first draft chapters of varying quality and acceptability to their seniors. At about the same time, while intradepartmental and interdepartmental consultations on revisions to the paper were still taking place, representatives of the mining industry and the provinces began to be consulted by EMR on the forthcoming study. The consultations generally took the form of a slide presentation, based on material from the Mineral Policy Review, and consisting mainly of graphs of selected data and connecting commentary.

Early versions of the presentation were shown to the National Advisory Committee On The Mineral Industry (NACOMI), whose members are drawn mainly from the large mining companies, and to individual companies such as Noranda and Cominco. Smaller and medium-sized companies were consulted as well, but not nearly as intensively. Time constraints, among other things, meant that the volume of material shown to different audiences was uneven. One of those who saw the show complained that 'they showed us a box of slides and called it consultation' whereas another, less demanding, was upset because his group were only given the time to see a small proportion of the slides.

The initial industry response was highly critical, partly because copies of the Mineral Policy Review, which contained proposals such as one favouring federal intervention in the marketing of minerals, had been seen by some major companies and some provincial governments. Though EMR hastened to explain that marketing intervention was a proposal by a junior staff member, and was not being seriously contemplated, the industry remained apprehensive. Wide-ranging intervention in energy through the National Energy Program, and in agriculture through a federal-controlled marketing board, were thought to be precedents threatening the mining industry. These fears partly explain the preoccupation of many of industry respondents with the issues of government intervention.

As reactions continued to come in, the Mineral Policy Review was progressively refined, as were later versions of the slide presentation. There were some significant changes, such as the dropping of the proposal on marketing mentioned above, and the dropping of proposals to broaden the powers of the Foreign Investment Review Agency.

In January 1982, the Provincial Mines Ministers and NACOMI were shown an updated version of the presentation. On 8 March 1982 the final version of the Discussion Paper was released, dated December 1981, and comments were solicited. Prepublication consultation had been far from exhaustive: hence the designation 'discussion paper'. To be fair, however, some would argue that consultation between the mining companies and the federal government is better than between most industries and their respective federal and provincial line departments.[4] Certainly prepublication consultation with at least some of the large companies may have had a partially co-optive effect, in that they may have felt constrained to mute their public criticisms of the Discussion Paper. The medium and smaller companies did not feel any such constraint, as some of the reactions to the Discussion Paper (see below) should make clear.

However, the most thoughtful response came from a company in the latter group, along with the more irate and unrestrained ones. It is important to remember that some of the industry responses detailed below are to prepublication consultations, and some are to the published Discussion Paper; the date of the response will give the clue.

Of more importance than prepublication consultation in determining the tone of the industry's response were the industry's current situation and its expectations. The situation in early 1982 is too well known to require detailed examination: falling commodity prices, crippling interest rates, overexposure to debt, and desperate international competition for markets all combined to bring the industry to its worst crisis for decades. In such a situation, what could federal mineral policy do for the industry? Realistically, very little in the short term. Unfortunately for EMR, however, the expectations of many in industry were high as a result of the federal government's November 1981 outline of a new development policy, *Economic Development for Canada in the 1980s*, which promised 'new initiatives in support of five key resource-based sectors', and a 'major report on the mining sector ... as a basis for consultation with the industry and provincial governments'.[5]

---

4. Michael C. Webb with Mark W. Zacher, 'Alloyed with the industrialists: Canadian mineral industries and Canadian policy towards intragovernmental regulation of mineral markets', Institute of International Relations, University of British Columbia, forthcoming, 1984.
5. Government of Canada, November 1981. Released with the federal Budget (Ottawa, 1981), p. 17, 18.

Although the Discussion Paper explicitly states (p. iv) that it reflects 'the themes and priorities identified in the *Economic Development* document', in fact it devotes virtually no attention to following up the very explicit commitments to mining made by the senior Cabinet committee which prepared the *Economic Development* document. Many in the industry regarded this as a serious missed opportunity, and their frustration is reflected in their responses to the Discussion Paper.

Supporting this view, one informant from within the federal government, interviewed for this study, claimed that it was only just before printing the Discussion Paper, and after explicit encouragement from another federal government department, that EMR even inserted a mention of the *Economic Development* document. Some in EMR, for their part, respond by claiming to have been inadequately consulted before the publication of *Economic Development*. The broad issue of how mineral policy fits into economic development policy overall is an important one, and the mining industry itself was slow off the mark to make this point. Those who saw the Mineral Policy Review in mid-1981 do not appear to have taken up the issue. Even later, when the industry was criticizing the missed opportunity in its responses to the Discussion Paper, it had few constructive suggestions as to how it might better have been exploited.

Finally, it should be pointed out that the immediate context of the Discussion Paper was conditioned by a decade of unhappy relations between the mining industry and both federal and provincial governments, resulting mainly from increased taxes and new regulatory regimes. Relations have improved immeasurably since then, and it is clear that the Discussion Paper will not be EMR's final word on mineral policy. On the other hand, it remains EMR's latest official word, just as *Economic Development for Canada in the 1980s* is still officially Canada's economic development strategy, according to the Minister of Finance. Thus, though they have been to some extent superceded by events, they remain the basis for discussion both of mineral policy and the policy process.

This, in brief, is the background against which both the Discussion Paper and the industry response to it should be evaluated.

2. THE DISCUSSION PAPER AND ITS CRITICS

EMR solicited comments on the Discussion Paper from the mining industry, provincial governments and other interested parties, and received a large number of these in the months subsequent to March 1982, supplementing those already received in the prepublication phase. A large number of these comments have never been published, and will be drawn upon below in examining the mineral industry's reaction to EMR's mineral policy proposals.[1]

The reactions tended to follow the structure of the Discussion Paper, and thus the procedure followed here will be to summarize, paraphrase and quote from particular sections of the published EMR document and then from various reactions to that sector. The subheadings correspond roughly to those of the Discussion Paper. My own comments are interspersed within this chapter in *italics* to distinguish them clearly from both the Discussion Paper and the industry reaction to it.

Various companies and organizations - mainly from the private sector of the industry - put a great deal of time into their responses and they deserve to be aired. They also deserve to be analyzed no less critically than the Discussion Paper itself, as mineral policy - if one is ever to emerge - will have to be a joint effort or, at the very least, the result of joint inputs. However, because many of the reactions to the Discussion Paper follow its format so closely, they tend to be locked in to its overall approach; this chapter, then, confines itself to the detailed reactions and analysis. The Conclusion on the other hand attempts an overview of the debate with some comments ventured on the respective roles of the federal government and others in the future formulation of mineral policy.

Preface and Background

Discussion Paper

The Discussion Paper begins by pointing out that Canadian mining is important, not only to the Canadian economy overall, but to mining internationally and to world trade. The industry has, in common with others, suffered from the world downturn in minerals demand and prices. Markets

1. See appendix 1 for list of responses quoted.

will improve, however, and the government 'believes that policies must be made for the longer term' (p. iii).[2]

How is this to be done? 'In the context of current preoccupations, this paper could have placed equal opportunity on the objectives of security, fairness and opportunity.[3] Instead it is the goal of opportunity that is stressed...' (p. 7). The reason: 'security' (of supply) has largely been achieved in the mining sector, while 'fairness' has been relegated to a 'subsidiary consideration because, relative to the oil and gas sector ... mining revenues are both smaller and more equitably distributed among the provinces and regions' (p. 7).

This leaves 'opportunity'. The Discussion Paper concludes - after looking at the resource base, the level of technology, and international markets - that opportunities continue to exist for mine and processing developments which will pay their 'social and private' costs and still make an adequate return on investment. However, there are now fewer opportunities than during the resource boom of the 1950s and 1960s. Those which do exist should be allowed to emerge via 'market criteria' rather than be forced through as a matter of government policy.

The development that does take place will therefore be marked by quality - 'the maximization of output per unit of labour input is the key the higher living standards' (p. 8) - rather than quantity. The size of the mining industry relative to the economy is therefore 'not a very effective argument for special treatment', though the industry does have unique features which might warrant special policy-making consideration (pp. 8-13). These include:

- risk: extraction, smelting and refining are not inherently more risky than manufacturing, but exploration and discovery is extremely risky, far more so even than for oil and gas. Larger firms have the advantage in being able to 'reduce' risk by pooling in joint ventures, and fully utilize the tax system's various exploration allowances;

---

2. Page numbers in parentheses refer to pages in the Discussion Paper, unless otherwise specified.
3. These were the original goals of the National Energy Program. See G. Bruce Doern, (ed. How Ottawa Spends Your Tax Dollars: Federal Priorities 1981 (Toronto, 1981) chapter 1; and G. Bruce Doern (ed), How Ottawa Spends Your Tax Dollars: National Policy and Economic Development (Toronto, 1982), chapters 1, 4 and 5.

- energy intensity: mining is energy intensive, especially at the smelting and refining stages;
- capital intensity: mining is capital intensive at the same stages, and this characteristic is growing which means a larger scale of individual operations, and greater concentration of producers;
- regional and frontier growth: many relatively isolated communities are dependent on mining for their economic base and source of employment;
- diversity: the industry is characterized by extreme geological, technological, structural and spatial diversity;
- price instability: mineral markets evidence large price swings;
- international character of the industry: it exports up to 80 percent of its mineral production. The post-1974 downturn should be blamed on the OECD's lower rate of growth, rather than mineral and taxation policies;
- the provincial ownership of most mineral resources: this was not elaborated on in the Discussion Paper.

The above shared characteristics generally justify a 'global view of mineral policy' rather than a commodity-specific strategy.

The implication of the above for mineral policy directions in the next two decades is smaller aggregate growth in markets. Canadian mining can conceivably maintain its competitive position. Even if it does not, it would not be catastrophic, provided 'production is carried on with efficient, environmentally sound methods that bring adequate returns to invested capital and provide good working conditions for employees' (p. 13). Development should not be pushed 'beyond what could be justified by a consideration of all private and social costs', and the emphasis should be on 'quality and structure of growth in the mineral sector, rather than just quantity...'.

To capture the opportunities that do exist, even after this contracted vision of the industry's future, requires meeting various technological, logistical, institutional and economic challenges which will be elaborated below. Government actions will be suggested to help achieve these but cannot, in themselves, redirect and reorient the mining industry. The Discussion Paper describes itself as 'basically noninterventionist' and notes that it 'does not encompass any major new tax initiatives, government programs, and legislative/regulatory changes'. Therefore 'complementary efforts by industry and other levels of government are

essential' (p. 14). The specifically federal role in mineral policy remains crucial, however. As elaborated earlier (p. 8), this role is essential in:

a) removing the imperfections of market structure that exist at the present time;
b) counteracting the interventions that occur in the inter-
c) national arena; providing public goods such as the gathering, assessment and dissemination of economic and geological information;
d) providing support where the private sector is unable to fulfill this role;
e) managing mineral resources in Canada Lands;
f) correcting divergences between private and social costs;
g) realizing the spin-off benefits from mineral development, e.g. in mineral machinery and equipment.

Reaction

A large number of the issues above are elaborated upon in the body of the Discussion Paper, and will be returned to later in this study. The Preface and Background did, however, introduce several important issues which were not developed later but which underlie the approach of the entire paper. The major issues among these are government intervention, social and economic goals, and investment climate.

Government Intervention

Virtually every reponse from the industry and others is centrally concerned with the issue of government intervention.[4] Although the paper explicitly describes itself as

4. E.g. British Columbia Chamber of Commerce, Energy, Mines and Petroleum Resources Committee, 'Brief concerning the federal Mineral Policy Paper' (23 February 1983), p. 5; British Columbia and Yukon Chamber of Mines, 'The decline of the Canadian Mining Industry during the 1970s' (May, 1982), p. 15; Falconbridge Ltd., 'Comments on Mineral Policy: A Discussion Paper' (May, 1982), p. 1, p. 5-6; Inco Metals Company, 'Comments on "Mineral Policy Review" background material' (July 1981) p. 4; Mountain Minerals Co. Ltd., 'Mineral Policy: A Discussion Paper', (31

'basically noninterventionist or laissez-faire' (p. 8), what it actually offers is no major new intervention (p. 14); thus it implicitly accepts the degree of intervention already existing. Some argue, as we shall see, that it supports new intervention as well. For this and other reasons, it has been almost universally seen in the mining industry as an interventionist document.

These perceptions have been fuelled by the paper's ambivalent attitude to the Foreign Investment Review Agency (FIRA) and the National Energy Program (NEP): because of the current high level of Canadian ownership, we are told, 'no new measures to strengthen the Foreign Investment Review Agency's operations or policies in the mineral sector appear necessary at this time' (p. 66). Furthermore, 'a mineral sector equivalent to Petro-Canada would not be required in the mineral industry at this point in time' (p. 67).

For an industry whose most distinctive characteristic is the necessity for long-term planning and a stable policy environment, the references to 'at this time' and 'at this point in time' sound alarm bells. The increased intervention of the last 10-15 years has made the producers extremely sensitive to the issue. Some reacted cautiously, asking for a demonstration of the federal government's good faith: 'While the review concludes that the philosophy of government policy will be non-interventionist, there are no indications where existing government programs will be redirected to support this philosophy.'[5] Others went further, saying that the Discussion Paper actually extends government intervention, via the exploration grant system, initiatives in the area of Canadian ownership, social and quality-of-life ob-

---

May 1982) p. 1-2, p. 4; Ontario Ministry of Natural Resources, 'Memorandum on Federal Mineral Policy Discussion Paper, (18 May 1982), p. 2; Placer Development Limited, 'Response of Placer Development Ltd. to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', (22 July 1982), p. 2; Prospectors and Developers Association (PDA), 'Brief on Mineral Policy: A Discussion Paper (11 May 1982), p. 3; Vancouver Board of Trade, 'Comments on the Mineral Policy Discussion Paper' (August 1982), p. 1-2.

5. Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 4.

jectives, further processing, mineral machinery, and science and technology.[6]

Some were concerned that the actions of the federal government belied the words of the Discussion Paper. The Prospectors and Developers Association (PDA) quoted the then Minister of State for Mines, Mrs. Judy Erola, as rejecting the National Energy Program approach for mining: 'If it works well, why tamper with it? We prefer to leave well enough alone', and go on to note: 'Since this statement was made, Canada Development Corporation was permitted to take over the Canadian assets of Texasgulf and more recently Eldorado has agreed to take over the mineral properties of Gulf Minerals. Hundreds of millions of capital left the country and there is grave doubt that these corporations will be better managed or improved in any manner beneficial to the public at large.'[7]

The Vancouver Board of Trade points to similarities between the Discussion Paper and guidelines of the Department of Regional and Industrial Expansion (DRIE). It suggests that existing major interventionist federal policies would have to be significantly changed before it would be possible to proclaim a non-interventionist mineral policy, and offers some examples of such interventionist policies: NEP, FIRA, and the November 1981 and June 1982 federal budgets.[8]

Finally, one response noted an apparant contradiction inherent in the claim of a 'policy' which does not 'intervene'. Mountain Minerals, a small company based in Lethbridge, Alberta *(whose detailed response contains a number of pertinent points but is almost a model in how not to win friends and, more important, influence people)* writes to the Minister: 'This is a gem. You start off by describing your approach as 'non-interventionist or laissez-faire', then go on to cite seven (count them) areas in which you intend to intervene!'; and, 'How can you talk about "the basic non-

---

6. B.C. Chamber of Commerce, 'Brief concerning the federal Mineral Policy paper', p. 5; Falconbridge Ltd., 'Comments on Mineral PolicyA Discussion Paper', p. 1; Placer Development Ltd., 'Response of Placer Development Ltd. to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 2.
7. PDA, 'Brief on Mineral Policy: A Discussion Paper', p. 3.
8. Vancouver Board of Trade, 'Comments on the Mineral Policy Discussion Paper', p. 1.

interventionist approach of the paper" on the one hand and in the same sentence talk about "this paper proposes some alternative government actions"?'.[9]

This last reaction is overstated, in that the Discussion Paper shows a clear awareness that policy implies some intervention and that it is the degree of intervention that is at issue. Early responses to the Discussion Paper such as Mountain Minerals', however understandable, frequently contain this element of over-reaction, conditioned by the previous decade's adversarial climate, to criticize any government initiative. Subsequent responses were a good deal more constructive. But it still remains far from easy to distinguish clearly between 'desirable intervention' (which, after all, is much the same thing as 'mineral policy') and 'undesirable intervention' (or 'government interference'), an issue returned to below in the Conclusion to this study.

Twentieth century governments throughout the world have intervened in mining industries and there is no chance that this process will be totally reversed. Placer Development Ltd. made an attempt to distinguish desirable and undesirable intervention, which is worth quoting at length:

> The role of government in relation to the mining industry, in our view, consists essentially in providing infrastructure and in facilitating entrepreneurial activity. Any proposed extension of this role should be subject to the most stringent cost-benefit analysis. In these days of growing budget deficits, it seems unlikely that any program which represents an increase in the cost of government can be economically or politically sustainable. The principle of non-intervention will, if applied with rigour and consistency in the areas of foreign ownership, further processing, mineral machinery and equipment, mineral science and technology, and employment and quality of working life, result in approaches which make full use of pri-

---

9. Mountain Minerals Co. Ltd., 'Mineral Policy: A Discussion Paper', p. 1-2, p. 4 (their emphasis). The tone of this response by Mountain Minerals is not typical of the written responses from the mining industry, but expresses the despair and exasperation felt by many at the time. See also OMNR, 'Memorandum on Federal Mineral Policy Discussion Paper' p. 2.

vate initiative and which do not add to the cost of government.[10]

Overall, the issue of government intervention is difficult to analyze in the abstract. It is difficult to go much further when analyzing it in general terms than overarching statements, such as Placer's quoted above.[11]

One specific issue which critics used to illustrate the importance of the underlying philosophy of government intervention in the Discussion Paper was that of 'tax expenditures'. An Ontario government commentator took particular exception to the use of the concept in the EMR paper:

> It implies that all income not taxed and left in the pockets of the earner is a government expenditure and further, that all income belongs to government which decides how much to give to each original earner by tax-expending it. It ultimately implies that government owns all labour and all other factors of production. This is a Canadian policy revolution of incredible proportions.[12]

The PDA argues in similar vein:

> The impression is created of vesting in the government the entire profits of the nation, a portion of which may be given back to individuals and corporations to suit specific government goals. The reality is that government merely take more or less of profits of enterprise - they create no wealth and, therefore, have nothing to 'give'.[13]

---

10. Placer Development Ltd., 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', in covering letter to Mrs. Judy Erola, 22 July 1982, p. 2.
11. An excellent collection of general statements on the issue from the business perspective is to be found the round table collection of the views of 17 Canadian business leaders in Chimo Magazine, vol. 6, no. 1, February-March 1983.
12. OMNR, 'Memorandum on Federal Mineral Policy Discussion paper', p. 2.
13. PDA, 'Brief on Mineral Policy: A Discussion Paper' p. 3.

The term 'tax expenditures', however, has some validity if it refers to the taxing authority forgoing revenue by making an exception in the general tax rules to achieve a specific policy goal. The nontaxation of certain northern employee benefits, in other words, can arguably be referred to as a 'tax expenditure'.

There is a specific kind of government intervention which is heartily resented by an industry which has to stand on its own and compete in world markets: such intervention transfers assets from competitive industries or companies to industries and groups which are not internationally competitive, and may never become competitive or independent. This kind of intervention, some argue, shows a consistent trend against the mining industry's interests, and there is little sympathy in the mining industry for it. As one critic explained:

> Social idealists in the tax department apparently believe they have a mandate to dispense fairness and justice through the tax system, in a world that is inherently unfair in every aspect. These missionary efforts invariably fall far short of their mark; the rich are never maimed. Every new 'Robin Hood' effort simply places new impediments on the backs of those members of the populace who are very ambitious, most productive, and striving to improve their lot.
>
> Every prospector is motivated by dreams of the discovery of the next 'Kidd Creek' and every school child has uncommon aspirations. Disproportionate individual success has a valid social and economic function. Great potential reward acts as a stronger incentive than can be rationally justified by its magnitude, multiplied by the coefficient of probability.[14]

This is a significant comment, and contains its own internal logic, but it also focuses on the issue of desirable and undesirable intervention: one has to be fairly rigorous about what forms of intervention are desirable in principle and why. If the industry wants its views to be taken seriously by government, it has to convince the latter that it has a consistent policy on intervention. It must be a policy that is not merely self-serving, but applies even when it might work against the immediate interests of sectors of the industry.

---

14. Ibid., p. 2.

The Clash of Social and Economic Goals

Many of those reacting to the Discussion Paper were far from happy about its dual emphasis on economic and social goals: 'the maximization of returns to labour and capital - without compromising on social objectives ...' (p. iii). They argue that economic goals are the prerequisite for the achieving of social goals, and that social goals - however important - will do little to strengthen the industry. Some even allege that the Discussion Paper concentrates more on social than economic issues.[15]

While this is not accurate, it does provide a striking illustration of the missed EMR opportunity to tie federal mineral policy to the resourcecentred Economic Development for Canada in the 1980s. *The latter is far more receptive to the primary importance of economic goals than the Discussion Paper and, by implication, is far more alive to the urgent need for a mineral policy which will ensure the economic viability of the industry. It is also more receptive to the shift in public opinion, which is now more sympathetic to economic priorities then it has been in recent years.*

One exasperated commentator suggests that the Minister address mineral policy exclusively in one paper and social policy in another.[16] *But this sidesteps the central problem of synthesizing the two, and it has to be recognized that, however inharmoniously, social and economic goals will always co-exist, interact and be forced to take each other into account.*

By contrast with EMR, the mining industry's own self-interest drives it to choose economic goals as the top priority, through which social goals may be achieved. Its particular problem, then, is not one of choosing priorities, but one of convincing governments and others that industry's priorities reflect broader interests as well. It may well be true that the 'achievement of economic goals is generally the prerequisite of meeting the social goals';[17] *but it is not enough simply to state this as self-evident. Not only must the argument be established in detail, governments and electorates also have to be convinced it is true.*

---

15. Falconbridge Limited, 'Comments on Mineral Policy-A Discussion Paper', p. 5; Vancouver Board of Trade, 'Comments on the Mineral Policy Discussion Paper', p. 2.
16. Vancouver Board of Trade, 'Comments on the Mineral Policy Discussion Paper', p. 2.
17. Ibid.

Investment Climate

The need for an improved investment climate has become a cliche: governments, industry and others all agree on its importance, and differ only on how it is to be achieved. Some in the industry regard improved investment climate as the major priority of Canadian mineral policy, and feel that the Discussion Paper treatment of this area (p. 6) is cursory, complacent and misleading.

Unlike the other major areas, 'investment climate' is not given a chapter to itself, and is dealt with in two brief paragraphs. It appears to have been inserted with little attempt to integrate it into the rest of the study, after industry spokesmen pointed out its importance during the prepublication consultations. These paragraphs, however, do refer to other areas which are covered in more detail in subsequent chapters, areas such as international competitiveness and infrastructure which directly affect investment climate. It is not strictly true, therefore, that 'investment climate' is not covered in the Discussion Paper, though the general and fragmented way it is dealt with, and the conclusions that are reached, are at least open to some criticism.

The paper refers to maintaining an attractive investment climate and maintaining stability in taxation, whereas the producers argue the climate is not attractive, nor is the tax regime stable. They point, again, to the National Energy Program, the Foreign Investment Review Agency, and the November 1981 federal budget.

One critic suggests that quantitative expansion, not just qualitative progress, is a prerequisite for an improved climate.

> The paper calls for the maintenance of an attractive investment environment. Regrettably there is very little attractiveness in that environment at the present time. It is generally perceived that the current investment climate in Canada is extremely poor. What should be the most important thrust of the Discussion paper is the direct relationship between the investment climate and the health and growth of the mineral industry. The paper seems to disregard the need for a positive investment climate for mining to expand, continue or even survive. A very real need for the 1980s is an economic and regulatory climate which will

inspire investor confidence and stimulate a new stream of investment in the mineral sector.[18]

There have, of course, been signs of government efforts in 1982 and 1983 to repair the damage done to investor confidence in recent years. The rhetoric surrounding both the NEP and FIRA has been toned down considerably, although there has been no major reversal in principle. The 1982 purchase of BP interests by Petro-Canada, in fact, indicates that not only a nationalist, but also an interventionist, policy is still being followed in the energy area, even at a time when one might expect a freeze and an attempt to slow the stampede of departing capital ($10.5 billion equity capital was lost to Canada in 1981, of which $4.6 billion was made up of disinvestment of foreign firms. There were various causes, but the major one appears to have been the purchases of equity of various foreign energy companies).

Though the government is at pains to distinguish energy and mining policy, the mining companies note that foreign investors are not satisfied by such distinctions and that they are the key to the investment climate overall.

One commentator argues that government initiatives in several of its 'priority' areas of concern (such as junior mining, mineral machinery and equipment, and mineral science and technology) can succeed only in conjunction with major new mine developments, which in turn will require significant improvements of the overall investment climate. Governments, according to the Prospectors and Developers Association, need to reverse the flight of investment dollars to real estate, collectables and short-term fixed interest instruments, and they can only do this by providing stable conditions for equity investment, such as reduced inflation and stability in taxation and regulatory policies.

The point should be made that world market conditions are the major factors accounting for the industry's problems. A poor investment climate is an additional negative

---

18. Ibid., p. 3. Sections of this statement are identical to previous statements by the Mining Association of Canada: see for example, MAC letter to Minister of State for Mines dated 29 March 1982, commenting on the Discussion Paper, p. 2. See also PDA, 'Brief on Mineral Policy: A Discussion Paper' p. 8; OMNR, 'Memorandum on Federal Mineral Policy Discussion Paper', p. 2.

factor, but still an important one. When there are already good reasons for not investing, a volatile and somewhat hostile policy towards mining investors, particularly foreign investors, has a definite and marked accelerating effect on disinvestment.

The connection between government intervention and investment climate is also persuasively argued by some companies. 'A significant increase in government involvement in business decisions is seen as the price of government support through grants and tax incentives'.[19] Grants, in particular, can lead to federal intervention in provincial jurisdictions, breakdowns of federal-provincial cooperation, and lack of effectiveness of mineral resource development. Combined with perceptions about other types of government intervention, via NEP and FIRA, this can contribute to an adverse investment climate.[20] For this reason, among others, grants are far less sought after by the industry than are indirect incentives.

More than anything else, the producers are seeking a clear commitment from government that one of its policy priorities is to ensure the continued strength of mining:

> ...there is a strong need for a positive attitude to growth and a clear message from government that it is supportive of those sectors - such as mining - that can bring economic strength to the country. Such support need not involve massive government handouts, nor does it mean sacrificing government's social goals. What it does mean, however, is the creation of a healthy climate for encouraging new investment in the mining sector, a clear indication that government wants mining to continue to be strong, both domestically and internationally, and in view of current conditions, focussing more on economic rather than social conditions.[21]

This is a considered, even modest, request. The fact that the Mining Association of Canada feels it needs to be made should alert the federal government to the widespread demoralization in the industry and the urgent need to do

---

19. Falconbridge Limited, 'Comments on Mineral Policy-A Discussion Paper', p. 19.
20. Ibid., p. 20.
21. MAC, letter to Minister of State for Mines for Mines dated 29 March 1982, commenting on the Discussion Paper, p. 3. This is a repetition of earlier similarly-worded requests by MAC.

what it can to restore confidence. Though the investment climate has improved somewhat since this request, the improvement is still cyclical -due to improved commodity prices and demand - rather than structural.

Resource Base and Security of Supply

Discussion Paper

The major problem in assessing the resource base, according to the Discussion Paper, is the uncertainty about the quality and quantity of undiscovered resources. Worldwide, mineral prices should be relatively constant in real terms for the foreseeable future. The Canadian resource base appears to be adequate to support the industry until the next century at current real prices, but higher prices or improved technology are a prerequisite of expansion, which could be undertaken only if economically viable (pp. 15-22).

Western anxieties over the security of mineral supplies are being heightened by: the decade of OPEC; more recent events in South and Central Africa where political strains could disrupt sources of supply; and the shift in the role of the USSR from an exporter to an importer of some raw materials.

The potential for disruption of supplies is usually exaggerated, and does not take into account that the producers themselves are vitally dependent on continuing to export. Moreover, Canada is potentially vulnerable only in the case of six important commodities: chromium, manganese, industrial diamonds, titanium, vanadium, and zirconium. Of these, only manganese and chromium warrant serious concern, as the others are obtainable from reliable suppliers or are readily substitutable (pp. 23-32). Both metals are to be found in Canada, but research is needed to ensure they can be economically mined in the future. Stockpiling is another alternative.

Overall, more analysis is needed 'before selecting an appropriate policy response to deal with a possible security of supply problem for Canada' (p. 34). This should be done in three phases:

a) evaluate the economic losses from any interruption of supply;
b) increase the effort to delineate known deposits and discover new deposits of these minerals;
c) improve knowledge of extraction technology for low-grade ore of these minerals.

Reaction

One of the early comments from industry was that the focus of the Discussion Paper was misplaced, in that it concentrated on domestic supply and security of strategic mineral supplies for Canada. The Canadian mining industry is primarily an exporter, and the resource base should be looked at in the light of the need for 'the maintenance of Canada's world trading posture in mineral markets'.[22] *(The Discussion Paper in fact, addresses this issue when considering competitive position).* It is further pointed out that the security-of-supply policies of foreign governments are probably weakening Canada's own position in both its domestic and strategic markets. 'Canadian government policies that assist with financing mine development abroad (through EDC for instance) may mean that these activities are carried out abroad by Canadian firms at the expense of domestic developments (e.g. Valley Copper). Foreign tax incentives favour locating mines abroad rather than in Canada. A comparison of the tax treatment of Noranda operations in Ontario, British Columbia, and the U.S. showed the (last-mentioned) to have (the most) advantageous tax regime'.[23]

The security-of-supply policies of foreign governments have undoubtedly favoured the proliferation of Third World sources of supply to the detriment of the Canadian mining industry. The Discussion Paper did not really come to grips with the problem, but EMR has subsequently concentrated a major effort on analyzing the situation, and begun to formulate policy responses.

Mining companies challenged the Discussion Paper's facts and projections in a number of cases, and criticized it for assuming that rising costs translate into rising prices.[24] *The Discussion Paper does, on occasion, argue precisely this (p. 18 but not consistently. On pages 35 and 46, for example, the Discussion Paper takes a far more realistic position in arguing that changing costs translate into a changing competitive position.*

---

22. Noranda Mines Ltd., 'Comments on the Mineral Policy Review', July 1981, p. 6.
23. Ibid., p. 9.
24. Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 5-6; Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 4.

A final issue is the long-term potential of exploration to expand the resource base significantly by identifying new economically viable projects. It is argued that the apparently declining success of exploration performance in adding to reserves is not only the result of market downswings, but also of government actions which have eroded investor confidence (eg. FIRA and tax changes) and discouraged exploration investment.[25]

Competitive Position

Discussion Paper

Canada's competitive position is evaluated by examining relative costs. The focus is on the cost relationship of the Canadian mineral industry relative to other mineral exporting nations: the lower the cost associated with a mineral deposit in Canada, the more price-competitive it is relative to other deposits in the world (p. 35).

The main factors affecting competitive position can be divided into:

a) internal factors, relating to the ore deposit itself. This includes deposit size, ore grade, type of ore (including co-products and by-products), depth of deposit, and remoteness from existing infrastructure;

b) external cost factors, which include labour, energy, material and other operating costs, capital costs, environmental protection costs, productivity and technology, the level of taxation, mineral prices, and the exchange rate;

c) external factors not related to cost, such as foreign tariffs, nontariff trade barriers, and international agreements.

Assessment of competitive position requires that all three categories be considered and their relative importance weighed.

In a policy context, it is important to assess the extent to which any factor is amenable to alteration through government intervention. The factors in the first category lie largely beyond government control, although the discovery

25. Placer Development Ltd., p. 4.

and development rate of ore deposits can be influenced indirectly by government through policies affecting the economic climate within which exploration and development are conducted, and through the provision of geoscientific information and mineral research and development. The same, however, is not true for factors in the second and third categories which, in most cases, are the same as those affecting other industries. These factors can be directly influenced by government policies, though clearly within limits. Government can, for example, directly affect the competitive position of the Canadian mineral industry by changing the level of taxes imposed on mining, the level of environmental protection, energy prices and the exchange rate (p. 35).

These factors are examined in some detail (p. 35-46) and are summarized in table 1, showing their impact on Canadian mining's competitive position in the 1970s, and their projected impact in the 1980s.

Table 1

Impact of Various Factors on Competitive Position

Factor	Impact on competitiveness	
	1970s	1980s
Ore grade	Slightly negative	Slightly negative
Type of ore[a]	Strongly positive	Strongly positive
Location	Slightly negative	Moderately positive
Capital costs	Neutral	Slightly negative
Labour costs	Strongly negative but with improving trend	Strongly negative
Energy costs	Strongly positive since 1973	Moderately positive
Exchange rate	Strongly positive since 1976	Strongly positive in the absence of appreciation
Taxation	Slightly negative	Slightly negative
Technology	Strongly positive	Strongly positive
Environment	Neutral	Slightly negative
Tarriffs and trade barriers	Strongly negative for processed minerals	Strongly negative for processed minerals

Source: adapted from EMR, Mineral Policy: A Discussion Paper, Ottawa, 1982.

[a] Including co-products and by-products.

Reaction

The documentation of the above arguments is considered valuable, but is challenged in many of its details. For example, one large company was more pessimistic on the outlook for five (capital costs, energy costs, taxation, environment and tarriffs/trade barriers) of the eleven competitive factors mentioned above. Another suggests four more pessimistic changes.[26]

Several were extremely critical about the way co-product and by-product values are introduced to gauge the competitiveness of individual metals such as nickel: it was widely felt that the high precious metals prices of 1981-82 could not be relied upon to continue and that it was dangerous to judge the competitiveness of Canada's nickel from such volatile premises.[27] Without credit for by-products, 'Canada is the most expensive nickel producer in the world'.[28] Three argue that there is double counting in consecutively looking at copper and nickel as by-products of each other, which leads to 'meaningless and misleading cost comparisons'.[29]

Almost universal is the reaction that the Discussion Paper is far too optimistic in gauging Canada's competitive position, whether in predicting commodity price rises, market growth, continued low energy costs, continued high precious metal prices, types of ore, environmental costs, capital costs, taxation and tariffs/trade barriers. To some extent these disagreements represent genuine differences in interpretation of data, to some extent they indicate the exceptionally pessimistic mood of the industry in 1981-1982; and to some extent they might also represent industry bargaining positions.

---

26. Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 11; Noranda Mines Limited, 'Comments on the Mineral Policy Review', p. 11.
27. Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 9; PDA, 'Brief on Mineral Policy: A Discussion Paper' p. 10; Falconbridge Limited, 'Comments on Mineral Policy-A Discussion Paper', p. 20; Noranda Mines Limited, 'Comments on the Mineral Policy Review', p. 10.
28. Noranda Mines Limited, 'Comments on the Mineral Policy Review', p. 10.
29. Ibid., p. 9; Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 10; OMNR, 'Memorandum on Federal Mineral Policy Discussion Paper', p. 5.

The Discussion Paper indentified several areas in which federal mineral policy would most directly affect competitive position: the level of taxes imposed on mining, the level of environmental protection, energy prices, and the exchange rate. It analyzes all three factors in some detail, and is backed by interesting documentation, but is noncommital about the policy measures necessitated by its analysis, to the disappointment of various companies and industry spokesmen.

One company accuses the Discussion Paper of understating the importance of taxes in an effort to minimize the effect of policy on competitive position.

> The Paper states that 'taxes have a much smaller impact upon profitability than do prices, the exchanges rate and operating costs'. In Placer's view, prices and ore grades have the greatest impact on profitability of the mining industry and these are factors over which neither the government nor the mining industry has control. Taxes have as great an impact on profitability as do operating costs and, like operating costs, can be controlled. Taxes have an important and immediate effect on profitability and in addition, as a direct reflection of whether or not the government is supportive of whether or not the government is supportive of the mining industry, have a long-term effect on new mine development.[30]

To a large extent, the Discussion Paper's lack of emphasis on taxation can be attributed to EMR's lack of jurisdiction in this area. This means that a vital area of mineral policy is not fully developed in the Discussion Paper and that possible federal actions to affect Canadian mining's competitive position are not developed. In 1983 EMR began to move to work more actively with other federal departments on these issues, and to by-pass some of the institutional intragovernmental restraints which had hamstrung the Discussion Paper.

---

30. Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 6.

Taxation and Incentives

Discussion Paper

The overall tax burden on the mining sector is no greater than the burden on manufacturing (p. 49). Should mining be more favourably treated because of greater risk? It is not clear that mining is more risky: exploration risk is comparable to investment in research and development, and exploration risks can be reduced through pooling and joint ventures. Lenient tax treatment of exploration expenditure, moreover, means that the after-tax exploration cost for a large company can be 25¢ or less per dollar expended (p. 53). However, smaller, or junior, companies may not be able to utilize the tax incentives, particularly if they have no income to offset. Mining profits are more volatile than those of other sectors, but this is offset by higher rates of return over the long term.

Taxation of 'economic rents' - a surplus of profits over and above those necessary to induce enterprises to continue to operate and invest - is frequently undesirable and always complex and administratively cumbersome. Mining is not comparable to petroleum products, where it is justifiable to tax large monopoly and scarcity rents (p. 55).

Federal revenue from mining has declined, while provincial revenues have grown. But, in view of the fact that (1) these revenues are small compared to oil and gas revenues; and (2) federal-provincial resource and finance ministers made an unwritten agreement in 1978 to preserve the status quo, 'no major review of taxation of the mineral sector is necessary at this time' (p. 55).

In the area of junior mining, however, some tax changes are desirable. While the tax structure improved for larger companies between 1971 and 1980, it has worsened for the junior companies. On the grounds of equity, efficiency (the junior companies have historically been more successful in finding new deposits per dollar expended) and to keep Canadian ownership of the industry high (the juniors are overwhelmingly Canadian-owned), tax changes should be considered in this area (p. 56). Possibilities are:

a) a system of exploration grants. This would enable the federal government to achieve very specific social and economic objectives, as the NEP for oil and gas has proposed. The companies would like the system because it would lead to immediate enhancement of cash flow and lower exploration costs in net present value terms. It

would, however, have high administrative costs, could be wasteful, inefficient and grow out of control;

b) tax credits. This would be beneficial only to those companies with taxable income from non-mining activities (as is the case with the present tax incentives and allowances);

c) enhancing flow-through benefits. This would help junior companies by adding to the benefits they could transfer to primary equity investors, in turn lowering the companies' effective cost of capital.

Reaction:

Virtually all comments touched on the need for stability after the turbulence of the 1970s. To some, it even seemed that the Discussion Paper had reintroduced uncertainty by questioning the greater risk and cyclicity of mining.[31] The need for an unambiguous federal taxation policy - based on the 1978 Federal-Provincial Resource Taxation Review - and for the federal government to take a leadership role in encouraging the provinces to modify their tax regimes was stressed and underlined.[32]

Once again, the Discussion Paper's facts were disputed in many areas. Two important examples were its calculation of internal rates of return (p. 55) and the 35/65 federal-provincial division of mining revenues (p. 54). Critics point out that the EMR rate-of-return model is 'totally unrealistic, and should be discarded', and that the revenue split is actually 45/55.[33]

Regarding incentives for the junior mining companies, there is almost unanimous and vehement opposition to exploration grants, even though the Discussion Paper had anticipated they would be eagerly welcomed. Exploration grants are seen as as particularly insidious form of government intervention, even by spokesmen for the smaller companies:

---

31. Ibid., p. 7.
32. Ibid.,; Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 13; Falconbridge Limited, 'Comments on Mineral Policy-A Discussion Paper' p. 22; PDA, 'Brief on Mineral Policy: A Discussion Paper', p. 9.
33. Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 12; Noranda Mines Limited, 'Comments on the Mineral Policy Review', p. 12.

> Such a grant system would give the government complete control over the exploration for mineral resources in Canada. It could dictate which companies would and which companies would not receive assistance, what resources would be the objective of the search, where the exploration should be conducted and how, and what social objectives must be realized... It would deprive the administrators of a company of their prerogative to expend the company's money in the ways they believe to be the most advantageous. Junior mining companies would be particularly vulnerable to manipulation by a grant system.[34]

Another argument against a grant system is that it might reduce the efficiency of the junior companies. Exploration by juniors is most effective in developed or partially developed areas, 'where the availability of infrastructure, power and transportation reduces the cost and enhances the value of the discovery'.[35] Government exploration grants might well focus the activities of juniors on remote and frontier regions, raising the cost and lowering the relative reward of their discoveries, and blunting their natural advantages.

Junior companies are entrepreneurial and willing to gamble if the potential rewards are great, no matter how risky. Tax incentives should therefore be a useful instrument to attract society's risk-takers to this form of investment. In contrast to the reception according to the grant system proposals, the enhancement of flow-through benefits transferable from junior companies to primary equity investors was enthusiastically welcomed.

In the area of junior mining incentives and taxation, the suggestions of the industry seem to have been heeded, subsequent to publication of the Discussion Paper: the grant system has not been introduced; some additional tax incentives have been offered; and flow-through benefits have been enhanced, most notably in the 1983 federal budget.

---

34. British Columbia Chamber of Commerce, Energy Mines and Petroleum Resources Committee, 'Brief concerning the federal Mineral Policy Paper', 23 February 1983, p. 5.
35. Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper; A Placer Task Force on Mineral Policy', p. 7-8.

Considerably more could have been done to improve the economics of mining operations through the tax system, according to an expert in mining taxation, R.B. Parsons.[36] Some of the prime objectives of the Discussion Paper could, he argues, be partially achieved with only relatively minor costs to government treasuries. Examples of recommended changes include:

a) streamline the maze which characterizes the current income tax deductions for exploration and development costs and the earned depletion allowance;
b) restore the three-year exempt period for new mines;
c) replace the flow-through share mechanism with an expanded, more flexible 'joint exploration corporation' concept;
d) permit depletion allowances to be deducted from any type of income.

These kinds of measures, of course, concern themselves more with the details of policy than its principles. The three-year exempt period, for example, is unlikely ever to return in its generous form of a decade ago, though a modified version is being suggested by Conservative party spokesmen testing the waters in anticipation of the next federal election. It is a radically different type of proposal from the other three, and the juxtaposition makes it hard to take the latter as seriously as they should be taken. To influence policy one has to be very selective about one's proposals, and not shoot at every target that moves.

Foreign and Public Ownership

Discussion Paper

The Discussion Paper views the situation in mining as 'more acceptable than in the petroleum sector, with 64 percent of mining assets under Canadian control in 1978, compared to 36 percent in the petroleum sector' (p. 59). Future events could change this situation, and thus there is the need to continue monitoring future levels of foreign ownership in the mineral sector. 'However, because of the current high

36. Robert B. Parsons, 'Tax notes: Lest we forget - a mineral policy for Canada', Canadian Institute of Mining Bulletin, vol. 76, no. 850, February 1983, p. 96-98.

level of Canadian ownership, no new measures to strengthen the Foreign Investment Review Agency's (FIRA) operations or policies in the mineral sector appear necessary at this time' (p. 66).

Public ownership in the mineral sector is not especially significant at the federal level. It includes ownership of Kidd Creek Mines Ltd. indirectly through Canada Development Corporation (CDC), part ownership of Nanisivik Mines, complete ownership of Cape Breton Development Corporation (Devco) and Eldorado Nuclear Limited (ENL). Provincial public ownership is important in some cases such as Potash Corporation of Saskatchewan (PCS), Societe Nationale de l'Amiante (SNA), Saskatchewan Mining Development Corporation (SMDC), Societe Quebecoise d'Exploration Miniere (SOQUEM). The British Columbia Resources Investment Corporation (BCRIC) is another type of institutional vehicle for encouraging Canadian ownership and control through provincial government sponsorship.

Petro-Canada was established in the energy sector for specific purposes (security of supply, foreign control, comparative weakness of Canadian firms) which do not apply to the mineral sector. Thus 'a mineral sector equivalent to Petro-Canada would not be required in the mineral industry at this point in time... The current policy regarding public ownership of the mineral industry at the federal level should be maintained. Thus federal government ownership will be pursued only for specific public purposes where other forms of government intervention would be ineffective. No such direct government investment in the mineral industry appears justifiable at this time' (p. 67).

Reaction

In general, the industry did not share the Discussion Paper's wariness of foreign ownership, though one large company did sound a note of warning that foreign oil companies may come to dominate mineral exploration activities in Canada.[37] Another noted the increasing involvement of the petroleum sector and commented that it was the result of their diversification strategies.[38] Overall, however, it was thought that foreign investment would benefit the Canadian mining industry, and the junior mining sector in particular.

37. Noranda Mines Limited, 'Comments on the Mineral Policy Review', p. 13.
38. Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 14.

The Discussion Paper is criticized for giving the impression that its present stance supporting the status quo might be reversed if Canadian ownership levels are not maintained. Canada is competing with the developing and other countries for capital investment, and there is no reason to favour loan capital over equity capital. Foreign investment 'may also delay the day when the sea bed will generate critical competition problems for Canadian producers'.[39] *(This is a shrewd assessment of the need to counter the ever growing diversification by consumers of their sources of supply.)*

Public ownership generally creates more concern in the industry than foreign ownership, though it cannot be described as a major issue, judging from the responses to the Discussion Paper. There was some criticism of the phrasing of the undertaking that a Petro-Canada for the mining industry is not envisaged 'at this point in time'. There is a general agreement that it will not be needed in the future either, and the federal government is asked to avoid such a step.

Nevertheless there is still some nervousness in the industry that the federal government might yet create a counterpart to Petro-Canada in the mineral area. Such a rumour has been publicly mentioned by Noranda's chairman, Alfred Powis, and others.[40]

Infrastructure

Discussion Paper

Government investment in infrastructure, according to the Discussion Paper, should not be undertaken simply for the sake of opening up a region, earning foreign exchange or creating jobs in sparsely populated areas. Job creation per se is not a sufficient justification for subsidization, nor is the generation of foreign exchange earnings. Since all economic activity creates jobs and many activities earn foreign

39. Falconbridge Limited, 'Comments on Mineral Policy Review background Material', p. 22-23; PDA, 'Brief on Mineral Policy: A Discussion Paper' p. 10; Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 8.
40. Centre for Resource Studies, CRS Perspectives, No. 15, Kingston, Ontario, May 1983, p. 4.

exchange either directly or indirectly, the guiding principle in choosing among public investments must be the promotion of highly productive activities that augment national per capita income. As a general principle, mineral developments should take place only if they can pay their way.

Thus, if the federal government is to be involved in the provision of infrastructure for entirely new mining areas or for remote mineral projects, it should do so in ways that minimize risk to its capital, and provide opportunities for sharing in profits indirectly resulting from its infrastructure investment, through user fees and/or progressive taxes. Government should seek to minimize risk by ensuring multiple uses of infrastructure, and by insisting on provision of sufficient data from the private sector to satisfy itself that the venture will be successful. Multiple use of infrastructure implies provision of infrastructure within a regional, rather than a single-mine, context. Repayment for infrastructure therefore may be designed on a regional basis, rather than being borne entirely by the initial mine (p. 76).

Reaction

The companies almost universally reject the idea of government equity participation, contractual profit sharing, user fees or progressive taxation as conditions for federal provision of infrastructure. They feel that government already shares adequately in the upside profits of developments through the taxation system.[41]

Though there is some doubt as to whether the philosophy underlying this approach to provision of infrastructure reflects the views of central policy makers in the federal government, it was widely felt that the section makes a creditable effort to deal with the complexities of a major issue. The federal government must assume a crucial role in providing infrastructure for new mining areas, especially on the Canada lands. Therefore, in a suggestion which could well apply to the whole spectrum of mineral policy issues, one of the producers underlines the necessity for the industry to be directly involved as well:

---

41. Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 16; Noranda Mines Limited, 'Comments on the Mineral Policy Review' p. 14; Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 13.

> Mining companies should work closely and continuously with government to formulate criteria and plans for infrastructure development which will best serve the interests of the industry and the country.[42]

Another area in which collaboration is necessary is that of social objectives, and whether the government might achieve these through the provision of infrastructure. The response on this is wary and ambivalent. Some reject out of hand the notion that social benefits or returns can be quantified.[43] Others seek to avoid any uniform imposition of social objectives such as native employment, or local contracts and purchasing of materials, in favour of retaining flexibility, 'since there is no uniform standard of community need or material development that can be related to all mining developments'.[44] This should not be interpreted as a rejection of companies' community social responsibility, which is usually accepted voluntarily, more particularly as it 'simply makes good economic sense to employ local people who tend to comprise a more stable work force'.[45]

A third company reaction to the linking of government infrastructural support and its social objectives accepts the notion that social benefits can be quantified, as well as the the principle of trade-offs, 'as long as the social objectives are realistically attainable and encompass areas which are appropriately handled by the private sector'. To do this, however, it is:

---

42. Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 10-11.
43. Mountain Minerals Co. Ltd., 'Mineral Policy: A Discussion Paper', p. 13.
44. Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 16.
45. Ibid., p. 15: 'In Inco's case, this is reflected in our northern employment program in Thompson, Manitoba....In addition, local domestic sourcing of goods and services in both Thompson, Manitoba and Sudbury, Ontario has been a long standing Inco practice'. But imposing such practices might curtail mine development in the early, non-productive stage. 'It is better that the commitment to social objectives..be permitted to evolve with the development', p. 16.

> critically important that some effort be made to quantify social benefits. Otherwise the cost-benefit ratio for infrastructure development will always remain a matter of speculation, with no limits to the amount of social benefit which government should reasonably expect from an infrastructure investment. Unless such benefits are clearly defined, mining companies which undertake to provide them in return for infrastructure provision may find they have entered into an open-ended contract.[46]

Social benefits have to be included within the economic justification, and the opening up of a new area should not be an end in itself, or undertaken simply to earn foreign exchange or to provide employment. By the same token, government should not put ceilings on the potential rewards to the companies of such risky investments by invoking its role in providing infrastructure. Thus the 'vague discussions' in the Discussion Paper 'about restricting the rate of return will only discourage investment in mining'.[47]

Placer's reaction to the federal proposals on infrastructure is an extremely constructive one, particularly in that it recognizes both the need for an active role in policy-making by the companies, and the necessity for companies and for government to recognize each other's aspirations and limitations.

Placer also accepts the principle of specific trade-offs between industry and government on infrastructure and social objectives:

> It is asked whether infrastructure support should be made conditional upon receiving firm guarantees from the companies regarding social objectives. The principle of such trade-offs is acceptable to Placer, as long as the social objectives are realistically attainable and encompass areas which are appropriately handled by the private sector.[48]

---

46. Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 12-13.
47. Ibid., p. 13.
48. Ibid., p. 12.

Such tradeoffs, it could be argued, go further than merely accepting that economic and social objectives must both be taken into account. They might well tend to undermine the prerequisite of economic justification, and they would also be cumbersome and expensive to administer in dynamic situations. They could both proliferate and perpetuate red tape which frontier-type projects, by their very nature, are in no position to finance.

Northern and Regional Development

Discussion Paper

Since Canada's vast northern regions are believed to harbour substantial undiscovered mineral deposits, and since mineral exploration in the more accessible southern regions has by no means been exhaustive, the federal government must continue to encourage regional mineral development. However, regional development strategies must be consistent with policies geared to fostering a healthy overall national economy. Attempts to reduce regional income disparities by encouraging mineral developments that are not economically sound should be avoided, since these could be detrimental to the average Canadian and, in the longer term, even to those citizens they were originally designed to help.

In the northern territories, the offshore regions, and in national parks, the federal government has a clear responsibility to manage the mineral base. In the territories, practically all the land - more than 99.5 percent - is under federal control. The general philosophy regarding mineral development on these lands is that market forces should determine the pace of exploration and the economic feasibility of development. However, mining is only one possible use of the land; decisions on land use must take account of alternatives, as well as the interests of all affected 'communities', from local to national. Furthermore, at the present time any decision making is subject to much uncertainty because of the ongoing negotiation of native land claims.

Minerals play a highly significant role in the northern economy. Between 1972 and 1977, for the Yukon and the Northwest Territories, mining accounted for 34 and 33 percent respectively of the total value of goods and services produced, 17 and 19 percent of employment, and 22 and 16 percent of value of payroll (p. 77).

The federal government is presently reviewing the taxation system respecting the Canada Lands. It clearly

must establish a regulatory climate that will reconcile economic and social concerns regarding northern mineral development. Furthermore, and particularly once the issue of native land claims has been settled, if market forces are allowed to determine which deposits are proposed for development, there will be no potential disruption of the regional society without an almost certain prospect of economic compensation.

Overall, it is likely that federal initiatives, the increased provision of information, the reform of the regulatory and administrative climate and the early resolution of native land claims, will remove a great deal of uncertainty and should create an atmosphere that will encourage industrial development and effectively reconcile the diverse interests of Canada's disparate northern community (p. 80).

Regional development on provincial lands, while not primarily a federal responsibility, would be significantly advanced if continuing progress in geological theory and exploration methods spearheaded by the federal government bear fruit in detecting new deposits.

The federal government will cautiously consider subsidizing some marginal private projects, provided the gain (especially in the use of underutilized human resources) is significant (p. 80-81).

The problems, costs, and methods of shutting down remote mines and their single-sector communities will also be examined by the federal government. *(They have subsequently been the subject of a federal-sponsored task force and a Centre for Resource Studies policy discussion seminar).* There is a need to cushion some of the impact, when communities try to diversify and to become independent of the sector which created them, and there is a need to create the conditions for mobile capital and a mobile work force (p. 81).

Reaction

According to some responses, one of the major problems facing mining in the north is not really addressed: the possible taxation of northern and remote region nonsalary benefits and allowances which are not presently taxed by the federal government. Several responses point out that the Discussion Paper does not provide any detailed analysis and policy proposals on which meaningful comments could be made in this area.[49] Others point out that EMR has no real

49. E.g. Noranda Mines Limited, 'Comments on the Mineral Policy Review', p. 15.

jurisdiction in the north, and that the Department of Indian Affairs and Northern Development (DIAND) is working on a northern mineral policy.[50]

The issue of taxation of northern nonsalary benefits has been a major bone of contention between the industry and the federal government.

> Considerable apprehension has been generated in the resource sector by federal taxing authorities contemplating taxation of these isolation benefits. Should such benefits be taxed as ordinary income in the hands of the workers, the immediate result would be a migration of workers to southern climes. There is already a strong feeling in Northern communities that few, if any, social benefits from taxes are returning to them.[51]

The issue has resulted in some spirited public exchanges between the Minister of Finance, Marc Lalonde, and the then President of the Mining Association of Canada, Harold Fargey. But the industry itself is divided on the issue. Some, admittedly a minority but influential nevertheless, feel there is an inconsistency in MAC's position. One cannot demand special treatment for mining in the north, they feel, while at the same time demanding that mineral policy be based on purely economic considerations.

On the other hand, Harold Fargey says the future of Canada's mining industry 'rests squarely with government',[52] which needs to restore a favourable investment climate. The importance of the investment climate is not really disputable, and he analyzes at length the relationship between it and mineral policy. What is more contentious is the issue of what the government should do to affect investment policy. Fargey asks for a tax regime which:

---

50. Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 14. The policy document has been delayed, and is now scheduled to appear in early 1984.
51. PDA, 'Brief on Mineral Policy: A Discussion Paper', p. 11. See also Falconbridge Limited, ,Comments on Mineral Policy-A Discussion Paper', p. 24-25.
52. Harold T. Fargey, 'The future of mineral development in the Canadian North - the role of investor confidence', address to the annual general meeting of the Northwest Territories Chamber of Mines, Yellowknife, Northwest Territories, 7-9 December 1982, p. 12.

a) takes into account the unusually high cost of producing minerals in the north;
b) recognizes that northern minerals must be priced competitively on a delivered basis in foreign markets;
c) recognizes as a social imperative the pressing need to create employment for northerners in the Yukon and Northwest Territories;
d) recognizes that northern mineral development should be encouraged as a desirable social and economic objective.[53]

In other words, in at least some selected cases MAC policy calls for 'social imperatives' and 'social objectives' in developing mineral policy, and thus economic policy. This appears to be inconsistent with MAC's usual insistence on the primacy of economic goals.

The tension between general principles (e.g. uniformity of taxation, the primacy of economics, and of non-intervention) and the real needs of specific situations can also be found in the EMR position. Some, overstating the case, even argue it is endemic to the Discussion Paper:

> (there is a) basic dichotomy pervading the whole discussion paper, between insistence on economic criteria on the one hand and the perversion of economic criteria by the social goals philosophy... regional economic disparities do have an economic function and an economic rationale.[54]

Another crucial issue of northern and regional development is that of land alienation which, it is expected, will be dealt with in detail in DIAND's forthcoming mineral policy paper. Future mining access is uncertain in parts of both the Northwest Territories and the Yukon because of proposals which may alienate 350,000 square kilometres in the NWT (the International Biological Program Reserves Committee) and 12,950 square kilometres (the Yukon Reserve, with an additional 82,880 square kilometres of surface rights also under consideration). Land alienation is not just a northern policy issue, but also

---

53. Ibid., p. 12-13.
54. OMNR, 'Memorandum on Federal Mineral Policy Discussion Paper', p. 7.

a central factor in Canada's national mineral policy, since the threat of future alienation of land through the establishment of new parks and reserves is currently a strong disincentive to mineral exploration and development. If the country's resource base and its potential for expansion continue to be reduced as current trends indicate, the competitive position of the mining industry will be severely threatened.[55]

Employment and the Quality of Working Life

Discussion Paper

A growth of 1 percent per year in labour supply is expected to be required for the 1980s. The wage level is higher than in other industries, but this is offset by:

a) the cyclicality of employment - bottlenecks in booms, and lay-offs in recessions;
b) the growing demand for similarly qualified labour from the petroleum industry. Employment in the mining and petroleum sector is expected to increase 2.9 percent per year in the 1980s (p.83).

There have been severe shortages of skilled and semi-skilled personnel, but only selective efforts have been made to recruit and train women and natives to fill these vacancies (p.89). Natives are also under-employed relative to population numbers. Health and safety issues affect the general availability of mine workers, but in the mineral sector federal jurisdiction is limited to uranium mining, Crown corporations such as Cape Breton Development Corporation and, indirectly, operations in the territories (pp. 88-9, 91, 95).

Reaction

The projections for growth in employment are unrealistic. Some are predicting 'virtually no growth in employment in the mining industry over the next ten years'.[56] Even the

55. Placer, Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 14.
56. Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 16.

Discussion Paper's projections of employment growth in the petroleum sector are seen to be highly optimistic.[57] Although some policy initiatives are welcomed[58] it is felt overall that an attempt is being made to implement social welfare programs under the guise of a mineral policy, particularly in the areas of the employment of natives and females.[59] Even where these objectives are endorsed by the companies, they make a point of rejecting quotas, legislated solutions or other forms of compulsion.[60]

Skilled manpower shortages are seen to be a continuing problem. Government help is sought mainly in laying the educational groundwork, while the larger companies wish to do their own training.[61]

The findings of the Discussion Paper relating to conditions of work are challenged by many. There has been an apparent decline, for example, in fatalities, and government statistics in the USA show mining has fewer incidences of injury than agriculture, forestry, construction, manufacturing, and the wholesale and retail trades.[62]

Environment

Discussion Paper

Mining, especially open-pit mining, can degrade the environment and affect water quality in surrounding areas. The Canadian mining industry is unhappy with environmental regulations which, it argues, could stifle future devel-

57. OMNR, 'Memorandum on Federal Mineral Policy Discussion Paper', p. 7-8.
58. MAC, letter to Minister of State for Mines dated 29 March 1982, commenting on the Discussion Paper, p. 7-8.
59. Vancouver Board of Trade, 'Comments on the Mineral Policy Discussion Paper' p. 7.
60. Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 15.
61. Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 17; Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 15.
62. Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 17-18.

opment. But pollution standards in Canada are not more stringent than in the USA and Western Europe, and are far less stringent than in Japan. They have not yet affected Canada's competitiveness with the less developed producers, though more stringent controls in the future, especially on sulphur dioxide emissions, could severely affect the smelting and refining industry, which is a major contributor to acid rain (p. 99).

Acid rain is a problem which Canada has to solve in collaboration with the USA at the governmental level. There are some signs that the diplomatic process has begun, though the costs are so enormous that the problem cannot be resolved quickly. Canadian public policy in this area is guided by the 'polluter pays' principle, according to which the producer and its customers pay clean-up and abatement costs (p. 100). The tax structure makes numerous relevant allowances, however, in the form of capital cost allowances (including accelerated depletion allowances), earned depletion allowances, investment tax credits and processing allowances. The resulting tax savings would, in general, be equal to more than half the capital expenditures, provided that the producer can raise the finance in the first place (p. 101).

There are also, of course, numerous other ways in which mining can affect the quality of the air, water and soil.

> It is fully evident that environmental factors must be taken into consideration in decisions relating to the development and operation of mineral facilities. Legislation to ensure that this occurs is already in place. For example, the federal Fisheries Act... (and) federal land use policy... Canadian mineral developments are subject to stringent pollution requirements. Nevertheless, research and development dealing with problems of air, land and water pollution will be further promoted, and preplanning for land use and reclamation needs will continue to be encouraged (p. 102-103).

Reaction

Unduly stringent environmental regulations will have a disastrous effect on the international competitiveness of Canadian mining. The producers argue that they have already done an enormous amount to reduce pollution, more than the Discussion Paper concedes. Furthermore, acid

rain pollution should not be unilaterally cleaned up before 'assurance of a comparable response from our U.S. neighbour'.[63] Both the responsibility for pollution and the responsibility for paying for it are disputed. Even the principle of pollution itself is challenged:

> (To say that) mining and mineral processing can disrupt the environment is revealing. To disrupt the environment is the purpose of all human activity, thus the whole section starts off on the wrong foot...[64]

Economic arguments were also presented to dispute the Discussion Paper's recommendations, and point to damaging potential effects to competitive position:

> Do you <u>really</u> think that the 'polluter' will be able to 'pay' ie. absorb, one way or another, those kinds of costs - and still remain competitive in the market place?[65]

Overall, the industry did not take up the opportunity to make a constructive response to the issue of pollution, and how the costs can and should be divided between the producers and society at large. This is unfortunate, because the problem will not go away, and a division of responsibility will be decided on, whether the industry contributes to the decision or not. However, the federal government has subsequently established a government/industry Working Group on Nonferrous Smelters to which may facilitate more extensive communication on acid rain-related issues.

One of the more constructive responses was to plead for uniformity and stability:

> Governments should firmly fix environmental rules, and enforce those rules fairly and equally, so as to remove such matters from the often emotional and easily manipulated public forum.[66]

---

63. Ibid., p. 20.
64. OMNR, 'Memorandum on Federal Mineral Policy Discussion Paper', p. 8.
65. Mountain Minerals Co. Ltd., 'Mineral Policy: A Discussion Paper', p. 19.
66. Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 17.

But even this response abrogates industry responsibility to contribute to environmental rules, and concedes to government far more autonomy in the public process than is advisable, particularly with such an emotional issue.

The fact that the Discussion Paper suggests no major new environmental constraints on mining is no cause for industry complacency: such constraints would not normally be expected to emerge in a situation of general depression. They will come, however, and the industry has to decide whether to contribute actively to the shaping of new environmental regulations, or to wait for unilateral government action.

Further Processing

Discussion Paper

Further processing of mineral resources has been a continuing objective of Canadian public policy, because it provides employment, increases value added, promotes regional development and increases tax revenues. Most provincial mining legislation requires processing of resources before export, but contains grounds for waiving the requirement. In 1974 the federal government amended the Export and Import Permits Act to support upgrading of resources. In addition, the extent of further processing in Canada is a criterion used by FIRA in assessing mineral development proposals.

Despite these measures and the policy that underlies them, about one half of Canada's nonferrous mine production still leaves the country in relatively unprocessed form. And although Canada's position at the Tokyo round of General Agreement on Tariffs and Trade (GATT) negotiations was based on the same policy, efforts to reduce foreign tariff barriers to more processed products have not been entirely successful (p. 105).

Because of the level of tax expenditures and other subsidies required to stimulate further processing, governments should determine whether the public cost of job creation in smelting and refining is worthwhile. In certain instances, such as the New Brunswick zinc smelter project announced in November 1981, the economic benefits far outweigh public costs. Generally, though, it is a very expensive way to create employment for regional development purposes; for each case, other opportunities that pay a higher social rate of return and generate greater employment at

lower public cost should be considered. For example, Canada now has enough smelting capacity to support a considerably larger fabricating and finished products industry, and the tax expenditures needed to support job creation in fabricating are much less than those required in smelting and refining. Substantial new opportunities also exist in the mining machinery and equipment industry (p. 109).

Measures to assist further processing, then, should be assessed on a case-by-case basis. CANMET/private-sector research into environmentally safe, efficient nonferrous smelting technologies is being intensified. Such activities can proceed in tandem with efforts to maximize Canadian content of smelter machinery and equipment for domestic and export sales. CANMET's budget is being examined with a view to providing support to more intensive research and development on processing technologies, where such technologies constitute a public good, where expected returns exceed the social discount rate, and where control of the technology will remain in Canada, stimulating the Canadian equipment industry.

No new programs of financial assistance to attract new smelters and refineries are necessary. The capital-intensive bias of the existing tax system is of concern, as is interprovincial bidding for further processing projects through tax concessions and energy pricing. Opportunity cost pricing of energy for energy-intensive metal exports should be considered in any cost-benefit analysis of future processing proposals (p. 111).

Reaction

There is some overlapping of interests between federal and provincial governments on this issue, and it is desiraole that the two get together to define what they regard as an 'acceptable level' of domestic processing. In doing so, however, they would need to

> leave mining companies free to complete the remaining processing outside Canada to satisfy specific worldwide market demands and processing economies.[67]

---

67. Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 22. As of 1982, 95 percent of Inco's expenditures on processing of Canadian ores were incurred in Canada.

It is emphasized that processing objectives should be decided on a case-by-case basis, on economic considerations. Even if a processing project is profitable on a stand-alone basis, it might not be the most profitable of a company's options. In such cases, government incentives should be available to make the option more attractive for the company's shareholders while achieving the governments policy objectives.[68] Companies should not be coerced into areas beyond their particular expertise by government policy objectives such as further processing; governments on the other hand may seek to achieve their objectives by offering incentives and subsidies.

Finally, considerable scepticism is expressed, both at the specifics of the Discussion Paper's calculations of economic and social benefits,[69] and at the inconsistency of its position on further processing compared to that on infrastructure:

> The spin-off benefits of further processing in the form of increased employment, value added, regional development and tax revenues make it an understandable objective of government policy. It should be noted, however, that similar spin-off benefits from infrastructure development are regarded by the Paper as inadequate to justify government subsidization. Placer recommends that the criterion of economic justification which the government endorses for infrastructure investment be systematically and strictly applied to investment in further processing.[70]

Placer is a mining and engineering company which is not currently engaged in smelting, and consequently differs with some of the large integrated mining companies on the smelting question.

---

68. Falconbridge Limited, 'Comments on Mineral Policy-A Discussion Paper', p. 27.
69. Mountain Minerals Co. Ltd., 'Mineral Policy: A Discussion Paper', p. 21: 'How can you possibly use a 'discount rate of 7.5 percent ... to determine whether investments are beneficial to society?' See also Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 17.
70. Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 17.

Mineral Machinery and Equipment

Discussion Paper

Although Canada is the world's third largest mineral producer, domestic production of mining equipment and machinery provides less than half the mining industry's requirements and leaves the rest of this large market to foreign manufacturers.

In 1980 the Canadian mining industry spent $1.2 billion on machinery, equipment and parts - $800 million on new items, and $400 million on replacement parts and attachments. The Canadian market for these goods is currently the third largest in the world, following the United States and the USSR. Canadian imports of mining equipment are fragmented, with an incomplete range of products and capabilities, and short production runs; and they are complicated by foreign ownership and the nature of import competition. Low or zero tariff protection has encouraged specialization in the industry, which in turn has reduced the range and Canadian content of products. To reduce unit cost, the Canadian branch-plant industry has evolved towards an assembly type of operation specializing in structural and low-technology components. Sophisticated controls and other high-technology components are provided mostly through the parent organization. Thus the export capability of the Canadian subsidiary is reduced by the parent's control over marketing and investment strategies (p. 115).

How will the industry fare in the 1980s? Marketing opportunities are heavily biased towards surface mining equipment that is energy efficient and that boosts labour productivity, and the higher end of the technology spectrum for all categories of equipment. Increased automation and recovery rates, and overall energy efficiency, are the priorities (p. 116).

What are the policy options for the high-technology sector?

- Procurement policy and strategic planning: The new Industrial Opportunities Program (IOP) and the Office of Industrial and Regional Benefits (OIRB) are appropriate focal points for most of the analysis required for the industrial benefits initiatives. Procurement from Canadian sources is desirable where feasible without prejudice to the mining industry's competitiveness. But 'buy provincial' legislation should not be allowed to balkanize Canadian industry (p. 120-121).

- Product mandating: Canadian subsidiaries of foreign companies should be granted mandates allowing them to develop products, produce tham for world markets, and market them internationally. CANMET participation in private sector technological research and development should be tied to keeping Canadian control over mining and resource technologies (p. 121).

- Broadening product coverage: inducements could be provided to mining companies to integrate into the equipment industry. In addition, special 'infant industry' types of assistance or fiscal inducements of a temporary and transitional character could be made available to help promising mining equipment enterprises expand into new product lines.

- Research and development support: research and development expertise based on government in-house activities (CANMET, National Research Council, etc.), as well as government research and development funding, can be used more effectively than in the past to establish a joint government-industry technology base that would stimulate expansion of Canadian mining equipment production for both the domestic and export markets.

- Establishing turn-key capability: it is necessary to establish Canadian consortia with comprehensive engineering, construction and manufacturing capability. Not only do mines increasingly require integrated machinery systems, they also need a minerals equipment industry that can produce and install integrated mine-mill-smelter-refinery facilities for domestic and international markets (p. 122-3).

- Export promotion: there are already 14 government programs to promote sale of Canadian manufactured products in other countries. Those most relevant to mining equipment are the Office of Overseas Projects, the Export Development Corporation (EDC), the Canadian Commercial Corporation (CCC), the Promotional Projects Program (PPP), and the Program for Export Market Development (PEMD).

Small or medium Canadian firms could get involved in consortia which would integrate a top-qualified team of experts in mineral technology, administration and finance: a group capable of directing every phase of a mining project from initial prospecting to production, management and sales.

This might require the participation of leading Canadian mining firms and integration of some of the existing export promotion programs, as well as the development of some complementary measures. On the technological side, it might be desirable for government agencies such as CANMET to participate in the consortium to the extent that they would become more involved in strategic R and D programs along with the private sector.

There is a need for an 'active plan' for the mining machinery and equipment sector that would target existing public programs in support of concrete actions on the part of the private sector. In particular, a comprehensive marketing plan for Canadian mining and technology, oriented towards capturing future opportunites in both the domestic and international markets, will be prepared as part of the machinery strategy of the Department of Industry, Trade and Commerce (p. 123).

Reaction

An initial basic question is whether mineral machinery and equipment is a relevant topic for a mineral policy paper, or whether it belongs rather to a broader discussion of economic development: '...mining operators are not machinery and equipment manufacturers'.[71] This question can (as has been done elsewhere in this study) be put another way: 'Can mineral policy be discussed in isolation from economic development policy?' *Certainly industrial spinoffs from resource development were part of the Lake Louise mandate of September 1980, and were therefore appropriate to consider in the Discussion Paper. The corollary of this argument, however, is that economic development policy overall should have been more systematically considered by the Discussion Paper than was possible in this one chapter.*

Nevertheless, it is important to understand why industry raises the question in the first place. Industry sensitivity to the issue is basically the result of its fear that it will be used to subsidize the development of other sectors:

---

71. MAC, letter to Minister of State for Mines dated 29 March 1982, commenting on the Discussion Paper, p. 4; Falconbridge Limited, 'Comments on Mineral Policy-A Discussion Paper, p. 7.

This section of the Paper only serves to strengthen the impression that the mining industry is seen as a tool to be used in the development of a manufacturing industry rather than being seen as a separate, distinct and continuing major part of the economy of Canada.[72]

Overall, the industry recognizes that it has a role to play in encouraging and advising Canadian machinery and equipment manufacturers, but it resists any attempt to force it to support the local industry, either through procurement policies, or through its direct involvement in the manufacturing process. Thus the industry tends to offer to help develop and test machinery, but it insists that the companies presently manufacturing such machinery - and not the mining companies - are the ones who are responsible for developing the domestic industry.[73] Moreover, government should give the manufacturing companies financial and fiscal incentives to develop, as well as help in obtaining access to international markets; but should not force Canadian mining companies to 'buy Canadian'.[74]

It is recognized by industry that the competitiveness of Canadian mining equipment manufacture has deteriorated worldwide and needs remedial action, though more in earth-moving equipment than in underground mining equipment. The growth of open-pit mining in the last two decades has been paralleled by the decrease in the development of underground orebodies. The changes require fundamental adjustments by the manufacturers, which they have been slow to make. There has thus been an overall decline, in spite of the fact that the Canadian mining companies have preferred to buy equipment and machinery locally and have even promoted Canadian manufacturers by using them in their Canadian mining ventures abroad.[75]

---

72. Vancouver Board of Trade, 'Comments on the Mineral Policy Discussion Paper' p. 7.
73. MAC, letter to Minister of State for Mines dated 29 March 1982, commenting on the Discussion Paper, p. 4; Vancouver Board of Trade, 'Comments on the Mineral Policy Discussion Paper', p. 7-8. The wording of their reaction is in many cases identical. See also Falconbridge Limited, 'Comments on Mineral Policy-A Discussion Paper', p. 8.
74. Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 21.
75. Ibid., p. 19; Noranda Mines Ltd., 'Comments on the Mineral Policy Review', p. 20.

It is also argued that the Discussion Paper relies on a double standard, protectionism for Canada (through procurement policies), and an export development strategy (presumably via free trade):

> Domestic procurement policies must not be allowed to become non-tariff barriers such as will stimulate reciprocal treatment by other nations.[76]

Two other concerns are that procurement policies might impair the competitiveness of Canadian mining companies by forcing them to buy low-quality local goods, and that competing federal and provincial procurement policies could lead not only to balkanization of the Canadian market but also to the development of conflicting requirements by different levels of government.[77]

It is also argued that the Canadian market is not large enough to provide a base for the development of a high technology sector of mining machinery and equipment manufacture. This is particularly the case after the cancellations of megaprojects:

> So much of what you are listing here relates to tar sands and other very large material handling equipment... How many projects do you anticipate in, say, the next 5 to 10 years when there is even a chance of having 'an integrated mine-mill-smelter-refinery'?[78]

Nevertheless, there are moves from some of the largest mining companies to involve themselves directly in manufacturing:

> Noranda, along with another Canadian mining company, is currently studying the establishment of a mining equipment manufacturing joint venture.[79]

---

76. Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 20.
77. Noranda Mines Limited, 'Comments on the Mineral Policy Review', p. 22; Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 20.
78. Mountain Minerals Co. Ltd., 'Mineral Policy: A Discussion Paper', p. 22-23; p. 25.
79. Noranda Mines Limited, 'Comments on the Mineral Policy Review', p. 22. Noranda is no longer involved in the joint venture, but its initial partner, Inco, continues to work on the project.

Overall, although procurement policies are almost universally opposed and detested by the industry, it is likely that various departments of the federal government will, backed by EMR, continue to move ahead with them. The technique is too common among Canada's trading partners to be overlooked by the government. Even more pertinent, the development of mine machinery manufacturing fits perfectly into the federal government's current economic development strategy - combining the comparative advantages of natural resources with high technology - and provides something of a test of that policy. Therefore the issue is not whether to embark on procurement policies - the federal government has already put the mechanisms in place[80] *- but what sort of procurement policies, and will the industry participate in their formulation, or merely suffer them under protest? The creation of policy is a complicated and messy process, which rarely satisfies everyone who is affected. The industry owes it to itself to be actively involved in determining the exact form, scale and scope of procurement policy. It needs to be involved in the formulation process, and not just as a critic of the formulations of others.*

For its part, the federal government should understand that an effective procurement policy has enormous ramifications:

> A key problem not really discussed is the sheer size of investment required to manufacture some of the more obvious items of equipment. It would involve both major investment and risk-taking to break new ground.[81]

The trick, for industry, is to get more Canadians to 'buy Canadian' without pricing itself out of the international market (which is where mining operates, given the high proportion of its product exported). And it is also to get Canada's trading partners to 'buy Canadian' and not raise barriers similar to Canada's procurement policies. This will not be easily achieved, but success is possible if a subtle policy is followed which will benefit the producers as well as the manufacturers. Such a policy will concentrate on the carrot rather than the stick: flexible general incentives rather than hard and fast rules and regulations.

---

80. Ed Arundell, 'Mining and procurement policies', Centre for Resource Studies, CRS Perspectives, No. 16, Kingston, Canada, September 1983.
81. Vancouver Board of Trade, 'Comments on the Mineral Policy Discussion Paper', p. 9.

The passive and indirect approach is inadequate in many respects for the mineral industry, and particularly inadequate in the case of the mining equipment industry. A more active and direct federal role includes the following elements.

- Harmonization of efforts: the integration of federal mineral research and development (R and D) efforts with other federal government priorities in economic developments is a prime goal.

- Rationalization of mineral R and D: Canada is entering a new stage of mineral development, characterized by more remote mine location and more problematic mining and processing. The situation demands a major thrust, led by EMR laboratories, in R and D related to new basic mining and processing technologies focused on unconventional occurrences of minerals.

- Social R and D: there is a clear case for a government R and D effort to open up technical options that can be used voluntarily, or under the weight of regulation, to mitigate the hazards facing workers in the industry. Advanced pollution abatement technologies also need to be developed. The situation calls for a new thrust in appropriate R and D by industry as well as government, to permit environmentally harmonious economic development.

- Technology acquisition and information dissemination: it is necessary to ensure that Canadian firms, especially in the mining equipment industry, are in a position, in terms of technical knowledge, to realize their full potential for participation in the mineral sector. Three measures are seen as essential:

a) negotiation with the provincial governments to increase public access to drill-core and other exploration results, in order to foster competition and development;
b) assessment of the relative benefits of importing select technologies, as opposed to performing the required R and D in Canada;
c) creation of a government role as broker for technological information acquired both from its own laboratories and from industrial intelligence activities abroad (p. 135).

There is also a dynamic federal role to be played in the area of implementation. One of the limiting steps in the achievement of technological progress is the demonstration phase that bridges the gap between invention and commercialization. Governments, and government technologists, should play an active role in getting desirable technologies over this demonstration hurdle. The view that an active role for government is required follows from the experience that the soft path of tax incentives and cash grants is often not sufficient to improve the competitiveness of industry through technological progress (p. 135-6).

Reaction

While there is almost unanimous agreement on the importance of mineral science and technology, there is a distinct lack of enthusiasm for further growth of an already large federal research establishment. The larger companies already have large research departments of their own (Inco spent $49 million on R and D in 1980, and this was only a part of the total expenditure on technological development; Noranda spent $20 million in 1980 on R and D, and was investigating joint ventures with other producers for major projects).[82]

The companies therefore would much prefer government support of the private sector research departments. They tend to feel that the expansion of the federal government role in the area would be more ominous than helpful. It would constitute an escalation of intervention, it might well produce research of little practical use to the industry, and it would help the federal government impose a procurement package on the industry. The need for technology monitoring and national coordination is disputed,[83] as is the

---

82. Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 23; Noranda Mines Limited, 'Comments on the Mineral Policy Review', p. 23; Falconbridge Limited, 'Comments on Mineral Policy-A Discussion Paper', p. 8; Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 22.

83. OMNR, 'Memorandum on Federal Mineral Policy Discussion Paper', p. 11; Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 22.

conclusion that an active government role is required due to the insufficiency of the soft route of tax incentives and cash grants, a conclusion which, critics argue, 'does not accord with the facts'.[84]

Overall, though the industry strongly supports the need for continued techological development, it is nervous about the federal government expanding both its capability and coordinating powers. Some of the federal plans look welcome to those in the industry, but others look like the preparatory steps for a large increase in its coordinating function. There is no doubt in the minds of some that EMR also sees its scientific and technological capability as a lever to enable it to follow active interventionist policies in both technology coordination and directing of research.

International Marketing of Minerals

Discussion Paper

Canadian mineral enterprises generally have been quite successful in penetrating and maintaining export markets, and will undoubtedly continue to be successful. But the Canadian government has an important supporting role, as foreign governments continue to shape patterns of international mineral development and trade. Some foreign policies discriminate against Canadian minerals and mineral products, while others threaten to escalate unfair competitive practices, such as subsidized production. The federal government must deal with such foreign policies to defend Canada's interests as a mineral exporter in the coming years. This can be achieved by:

- improving access to currently protected markets;
- countering the unfair competitive practices inherent in the subsidization of other producers under security-of-supply rationalizations;
- facilitating the export promotion activities of Canadian mineral enterprises;
- ensuring that Canadian mineral export interests are furthered, in balance with other objectives, in international arrangements designed to manage or shape the functioning of mineral markets.

---

84. OMNR, 'Memorandum on Federal Mineral Policy Discussion Paper', p. 11.

Effective and aggressive bargaining strategies, as well as better information and institutional innovations in the marketing of minerals, will be needed to realize these objectives.

A number of economic growth, mineral consumption and price scenarios are advanced and, with some qualifications, 'Canada is and will continue to be highly competitive in most minerals' (p. 141). Exploration is shifting back to the developed market economies from the developing economies and 'it appears probable that Canada's mine production shares will be maintained' (p. 146). Tariff and nontariff barriers have created barriers for Canadian exports, particularly refined and semi-fabricated copper (p. 147-9). Commodity agreements and resource diplomacy are also unlikely to have much effect on prices.

'Canada could take advantage of its position as a secure supplier and provide long-term contracts to countries concerned with procurement security, and so enlarge international markets for exports. Canada also will continue to be conscious of the interest of its major trading partners in maintaining secure supplies of minerals, and consider how measures to meet this need may be translated into greater access for other Canadian products as well' (p. 151).

Reaction

The Discussion Paper's price forecasts are seen to be too optimistic, but there is general agreement that there will be no significant real growth in the 1980s.[85] This means that Canadian companies will have increasingly to concentrate on minimizing costs and maximizing productivity in order to stay internationally competitive. Overall, it appears as if Canadian competitiveness is more likely to decline than to improve.

Price forecasts, moreover, are not a reliable basis for the formulation of mineral policy. Commodity prices are

85. Noranda Mines Limited, 'Comments on the Mineral Policy Review', p. 24; Inco Metals Co., 'Comments on Mineral Policy Review background Material', p. 24; Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 26; OMNR, 'Memorandum on Federal Mineral Policy Discussion Paper', p. 12; Falconbridge Limited, 'Comments on Mineral Policy-A Discussion Paper', p. 19.

notoriously volatile, and it would be highly inadvisable to attempt to adjust policy to its frequent moves and whims.[86] Policy, of course, should aspire to the highest possible degree of stability; the mineral industry, with its unusually long production lead times, needs policy stability more than most sectors.

Aside from the purely economic factors of price and costs, it is also important to look at trade strategies. The EMR intention to provide more and better information to the producers is, not surprisingly, welcomed and the federal government's present contribution in this area is praised.[87] Because of Canadian mining's export orientation,

> international competition is the basic force dominating industry survival and growth... Hence, continued access to foreign markets, and the ability to sell competitively in those markets will be a major challenge facing Canadian firms during the next decade.[88]

Thus, information is not always enough. Though the industry wants to maintain control of the international marketing of minerals, and confine government as far as possible to a support role, it also requires access to foreign markets and the reduction of tariff and non-tariff barriers. Some argue that such government help is only really necessary for trade with the non-OECD countries.[89] Others are pessimistic about the prospects for success in negotiating, for example, lower tariffs for metals, as long as Canada's manufacturers are themselves sheltered:

> Canada maintains a high degree of protectionism for its manufacturing industries... reduction of trade barriers to metals in other countries will probably be contingent on reciprocal suspension of Canadian protectionism in sectors of such sensitivity as mining machinery and equipment. The problem of tariff barriers to trade in refined metals, while real, must be seen in the context of Canada's own tariff and non-tariff trade barriers,

---

86. Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 27.
87. Ibid., p. 27-28.
88. Noranda Mines Limited, 'Comments on the Mineral Policy Review', p. 25.
89. Falconbridge Limited, 'Comments on Mineral Policy-A Discussion Paper', p. 18.

> especially those aimed at this country's major mineral customers, Japan and the United States. Global tariff structures on minerals and metals should be exploited for the opportunities that they present, i.e. concentrate sales, until Canada is prepared to engage in a reciprocal reduction of trade barriers. Until then, deliberate attacks on excellent customers can only damage Canada's marketing performance.[90]

Turning from Canada's customers to Canada's competitors, concern is expressed that some of the producers are subsidized by their governments. Even worse, it is argued, the Canadian federal government is subsidizing producers which compete with its own mining industry, and it is within the power of the government to change this situation.[91] *A similar concern has been expressed by producers in the USA, where legislation has been proposed to prohibit the use of U.S. funds to assist the production of minerals in the less developed countries where this would harm the U.S. domestic mining industry.*[92]

The general area of international marketing of minerals has been identified as a high priority policy issue and subjected to intense follow-up subsequent to publication of the Discussion Paper. In January 1983 an MAC-EMR 'Subgroup on International Mineral and Metal Markets' met for the first time, and considered many of the above issues in more detail.[93]

In May 1983, a general conference attended by a large number of industry, government, academic and diplomatic observers was hosted by EMR in Ottawa: the 'Canadian Mineral Outlook Conference 1983'. The conference was repeated in 1984 and will probably be repeated annually. Its function, however, will clearly be the broad dissemination of information rather than providing material for the formulation of mineral policy.

---

90. Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', p. 28.
91. Ibid., p. 29.
92. Centre for Resource Studies, Perspectives, September 1983, No. 16, p. 4.
93. See for example, Winston W. Chambers and P. Lafleur, 'Market Share and Market Access: The Canadian Mineral Industry in a Changing World Economy', December 1982.

Overall, it would be true to say that the area of international marketing of minerals has been more seriously followed up to date than most of those discussed in the Discussion Paper. In terms of domestic Canadian policy, this seems to be one of the least contentious of issues with the most common ground between the federal government (especially EMR) and the mining industry. Though it is clearly a vital area, mineral policy will have only a limited direct role in sorting out its problems: through diplomacy, information gathering and dissemination of information. The real issues of international competitiveness and comparative advantage underlie the marketing issue and will be crucial overall for the industry. And these are far more complex and intractable issues, as we have seen in considering other parts of the Discussion Paper.

3. CONCLUSION

The Discussion Paper and the response to it constitute a valuable case study in the formulation of mineral policy. This is not so much because the debate has come up with a blueprint to extract Canadian mining and all who benefit from it from the serious problems it is experiencing and will continue to experience in the 1980s. Rather, it is valuable because it has graphically displayed most, if not all, the tensions underlying the policy-making process and the need to attempt to resolve - or, at the very least, alleviate - these tensions. One can learn as much, if not more, from failures as from successes.

The actual results of the debate over the Discussion Paper are still inconclusive, and will be dealt with in a later Centre for Resource Studies publication. Some specific requests by the industry (e.g. on certain tax issues and on the desirability of exploration incentives rather than grants) have been granted; but overall the most important result of the debate seems to have been its cathartic effect. There now appears to be a tacit agreement to work more quietly and constructively together on those problems where joint action is possible.

The international marketing of minerals (see above, page 49-51) is a notable example of the common ground in policy concerns between industry and governments. But, as was pointed out above, international marketing is underlaid by far more difficult issues of international competitiveness and comparative advantage. A serious dialogue between industry and government on the really tough issues, such as these, has not yet been implemented. One can say, however, that the climate for doing so is now better than it has been for at least a decade.

The Meaning of 'Policy'

As was mentioned above, the term 'policy' is a treacherous and difficult one, almost what social scientists would describe as an 'essentially contested' concept. To quote the *Dictionary of Social Sciences:*

> There is some ambiguity in current usage. The term may indicate the existence of a considered intention, plan or programme (as in 'the Labour Party's housing policy'); but it is often used to refer to a course of

action in some field where a programme may exist but does not necessarily exist (as in 'Lord Palmerston's foreign policy', which could be used simply to refer to what Lord Palmerston did in the field of foreign affairs. It is also used very compendiously (as in the book title *The Cambridge History of British Foreign Policy)* to refer to a series of policies rather than one policy.[1]

It is clear from this that one can justifiably use either sense, but that to mix the two promiscuously will necessarily create confusion. When EMR puts out a major document entitled *Mineral Policy: A Discussion Paper*, one might expect an attempt to arrive at 'A Mineral Policy', rather than a description of various policies it is pursuing in the mineral field. However, instead of A Mineral Policy, one gets a large amount of interesting but uncoordinated information on various mineral policies. A list of 'current concerns' emerges, but no methodology for evaluating these concerns in terms of a reasoned and explicit set of priorities.

There are, it is true, some attempts to move toward the general principles and strategic goals which are the prerequisites of a mineral policy. For example, there is the suggestion that Canada's comparative advantages in natural resources and high technology might be exploited in a synergistic way (see pp. 125-136 on science and technology; and pp. 2-3, 113-125 on mining machinery and equipment). But even a charitable view of the Discussion Paper could not argue that these intimations of a mineral policy have been followed through systematically.

Furthermore, there are many in EMR, the federal government, industry and elsewhere who would argue that it is naive to talk of 'A Mineral Policy' rather than 'mineral policies', and that the only viable sense of the term is when it refers to what the *Dictionary of Social Sciences* calls 'a series of policies rather than one policy'. There are two implications to be drawn from this argument, neither of them entirely convincing. One is that not only is planning impossible, but it is fruitless to attempt to do more than to respond flexibly and quickly to situations as they arise. The other implication, ostensibly more subtle, is that there cannot be one monolithic mineral policy, but there can be planning for various areas of mineral policies: a policy for research and development; a policy for further processing;

---

1. Wilfred Harrison, 'Policy', in *The Dictionary of Social Sciences*, p. 509-510.

a policy for international trade and so on. The latter argument is not usually made this boldly, but once one does so, its difficulties become manifest: how can one have conflicting strategies for various areas of mineral policies? And, if they are not conflicting and are consistent with one another, why are they not perceived to constitute 'A Mineral Policy'? This is not, of course, to deny the need on occasion for 'vertical' divisions within mineral policy, such as special provisions for minerals with particular problems; but 'tin policy', 'potash policy' and 'uranium policy' all have, logically, to fit into mineral policy's cross-cutting, 'horizontal', overall strategy (see also Discussion Paper, p. 8-13).

Take the issue of land alienation (above, p. 34) which, as Placer Development points out, is not just a northern policy issue. The crucial general point about mineral policy formulation emerges from the consideration of this particular, narrowly-defined, issue. Policy is frequently indivisible and can only be made effectively by taking the whole into account. One cannot have a Northern and a Southern Mineral Policy just because the federal bureaucracy is divided up that way. Special provisions for the north are quite compatible with the concept of A Canadian Mineral Policy, provided they do not contradict its overall strategy and principles. Whatever the real differences between the north and the rest of the country - which will result in different policies at times for each - one mineral policy has to be devised for Canada as a whole.

The example of the industry response to the issue of land alienation is not meant to suggest that the industry has any firmer idea of possible strategies for arriving at a comprehensive mineral policy than has the federal government. On the whole, the industry did not object to the approach or scope of the paper. The responses followed not only the format of the Discussion Paper, but also its approach: policies were seen in isolation from one another, and as unrelated. Some companies would, for example, condemn government intervention in one area - such as procurement policy - and then demand it in another - such as tax-free benefits for northern employees - without saying why the two cases were different in principle. Although respondents were highly critical of the Discussion Paper, their criticisms tended to be limited to specific 'current concerns' rather than a critique of the underlying principles. There were, however, exceptions, particularly in areas such as government intervention and the clash of social and economic priorities.

There are, of course, powerful arguments which can justifiably be made about the extreme difficulty of arriving at 'a' viable Canadian mineral policy, dealt with in the next section. Some would, however, go even further and make a virtue out of what they perceive to be necessity. Why, they would argue, aim for a mineral policy which will constitute an inflexible blueprint? Is it not better to stay flexible, to travel light and seize the opportunities as they present itself? The answer to this is that an adequate mineral policy would never be an inflexible blueprint. It would not, for example, lay down that all public ownership in all areas should be abolished (or increased); but it would have a set of priorities which included a position on public ownership and an explicit set of principles against which future public ownership issues and responses should be measured. Such priorities should reflect - or attempt to create - a broad Canadian consensus about the role of mining in Canada's economy and society. Such a consensus, and its concomitant priorities, should be broad enough to be non-partisan (i.e. it should survive changes in governments), but specific enough to provide guidelines which go beyond praising Motherhood.

The Discussion Paper's positions, however, seem to be based largely on *ad hoc* contingent considerations. The balance and relationship of private and public sector ownership, for example, is an important issue for mineral policy, and some clear priorities on it are vital for the formulation of a coherent overall strategy encompassing, as it must, the private sector. To say merely that there is no present need for increased public ownership is thus to avoid the issue of the desirability of such ownership, the circumstances when it might be needed, and the priority accorded it by mineral policy. It would be unrealistic to ask, as some in the industry would, for a permanent renouncing of public ownership. Nevertheless, it is important that mineral policy attempt to commit itself to a broad strategy and set of priorities on this issue and others. The nature of mining means that companies have important rigidities determining where they locate their mining activities. Mines are planned years, even decades, ahead. This means, that mining, far more than manufacturing for example, needs a firm, consistent and stable policy laying down criteria for public ownership. In such a situation, equivocation and uncertainty could in some cases be even more harmful to the development of new projects than a clear and consistent policy calling for more public ownership.

Another basic issue on which both the Discussion Paper and its critics equivocated was that of the respective weight

to be placed on economic and social priorities. It should be emphasized that a mineral policy cannot (and should not) offer any immutable rules on this issue. The real challenge is to develop a coherent strategy to order one's priorities. This is a nettle that both the Discussion Paper and its critics consistently fail to grasp, one that requires hard and at times unpopular choices. This failure seems deliberate, in that explicit attempts are made (e.g. page iii) to argue that one can have it both ways without any sacrifices. But, whether one wishes to emphasize social or economic goals (or whatever weight one wishes to put on them respectively), it is not possible to formulate any workable policy if one avoids these basic choices and decisions. Policies are by their very nature choices.

The Difficulties of Formulating Mineral Policy

None of the above is meant to imply that formulating a mineral policy is a simple process or that, even if one succeeds, one's successes will ever be permanent. There are a large number of serious obstacles, of varying degrees of tractability. Mineral policy must largely accommodate itself to a number of completely intractable factors, such as the crippling competition from new Third World producers not wholly motivated by profit considerations, and from other producers, such as Australia and South Africa. All of which adds up to dismal prices and price outlook. Mineral policy must also attempt to deal with those factors over which only a limited range of responses is possible, such as the worldwide substitution of synthetic products for metals now taking place, or the frequently conflicting demands made by other Canadian industries on the economic development priorities of governments.

Mineral policy, moreover, is made a difficult goal by the federal structure of Canada, with the provinces claiming the prime constitutional jurisdiction over natural resources, but unable to agree either among themselves or with the federal government on many of the fundamental issues of mineral policy. The federal-provincial cleavages on mineral policy are so basic and well-documented that it would be superfluous to elaborate further on them. The Discussion Paper makes an effort to be diplomatic towards the provinces, but was not well received by such major mining provinces as British Columbia, Ontario and Quebec. The provinces do not seem, however, to have the resources, or the will, to translate their constitutional prerogatives into a role of alternative leadership in the formulation of mineral pol-

Most important of all, the federal government controls the horizontal policy instruments (tax, trade, monetary policy etc.) which are the prerequisites for a coherent mineral policy.

Finally, within the federal government itself one finds significant divisions and rivalries between departments such as EMR, Finance, Environment, Labour, Indian Affairs and Northern Development, Regional Industrial Expansion, and External Affairs, among others. The proliferation of central agencies and Cabinet committees, meant to mitigate these rivalries and coordinate policy, has in some cases merely intensified intragovernmental rivalries. Even within EMR there are significant differences between groups and individuals, on matters of both detail and principle. The Discussion Paper itself, as we have seen, met with a mixed reception within EMR.

None of these divisions, between EMR and the provinces, with other federal departments, and within EMR, are made overt in the Discussion Paper, but it is replete with evidence of the divisions, and a testimony to their strength: see, for example, the chapters on northern development (p. 77-82) a responsibility of DIAND, and on the environment (p. 99-104), responsibilities of the Department of the Environment and of the provinces.

Nor has the mining industry been able to speak with one voice on many of the basic issues of mineral policy. The responses to the Discussion Paper are a case in point. The major efforts were, overall, made by the large individual companies in their own right, rather than by MAC, as spokesman for the entire industry. And the differences in interests between the small and large companies are constantly beneath the surface of the responses to the Discussion Paper: for example, the different respective weights placed on issues such as exploration, land tenure, northern development and further processing; and the preferential treatment given to the large companies in preliminary consultations.

These internal divisions, within both government and industry, are important. Both appear unable to speak for themselves with a united voice. And if neither government nor industry can decide within themselves on a mineral policy, how can they get together to formulate something lasting and coherent? Nor should one forget that organized labour must also contribute actively to any policy which is to be really viable. This across-the-board lack of unanimity is an important illustration of the difficulties facing the formulation of mineral policy, and it simultaneously indicates the necessity for such a policy.

The Role of Government

A source of disagreement between the Discussion Paper and its critics is the contrasting views on the role of government. The Discussion Paper largely portrays government as a sort of referee, a relatively neutral arbiter which enforces equity and fair play on the competing groups struggling for power and influence in society. By contrast, the industry respondents almost unanimously see the federal government as representing (at least partly) itself, and as encroaching on the private sector with the help of its virtually unlimited access to 'taxpayers' money. So pervasive are these contrasting views of the role and nature of government that many of the exchanges between the Discussion Paper and its critics take on the flavour of a dialogue of the deaf: in many cases neither can hear the other because they are not even talking about the same things, and their very definition of government (not merely its role) is essentially contested.

At other times there is dialogue, but it comes down to a debate about what is desirable and what is undesirable government intervention. Take the issue of the threatened termination of the privileged nontaxable status of nonsalary benefits received by northern employees. For more than two years this has been the most hotly-debated issue between the federal government and the mining industry, taking up a disproportionate amount of time which could have been better employed laying down jointly agreed principles for a mineral policy. The Liberal government partially backed down to concerted industry and northern pressures in December 1983, and is allowing the continuation of benefits for mining operations.

Northern benefits is an issue which is of interest not so much as a policy issue but as an example of how self-interest and the pursuit of an immediate gain can come into conflict with principles. For example, Placer Development, which probably produced the most sophisticated response of all to the Discussion Paper, made a clear statement about the advantages of a limited role for government, quoted at length earlier in this study. Placer, however, later comes out in favour of the tax-free status of northern benefits, stating that their taxation would be a 'counter-economic deterrent to the expansion of the resource base'. But surely the tax-free status itself is a 'counter-economic' subsidy by the federal government to encourage regional development? However justified they may be on social and other grounds, northern and regional development subsidies run counter to the pure economics of the enterprises being subsidized.

A better argument for the retention of tax-free northern benefits would seem to be that the government encouraged private investment in the north by providing certain incentives which it would be unfair to withdraw now that the investments are made and are irreversible. The federal response of December 1983 would seem to be a concession to this kind of argument, though few if any in the industry seem to have argued their case in this way. The latest position, of course, does not resolve the issue of government intervention, and whether the tax concession was desirable in the first place. To be consistent, the industry has to accept that the goal of 'expansion of the resource base' is also fully susceptible 'to the most stringent cost-benefit analysis'. If necessary, the industry should contribute directly to such an analysis.

If challenged on the issue of government intervention, industry spokesmen do not deny that they welcome it in some forms. Not surprisingly, the forms which are seen to be acceptable are the 'no-strings' instruments, such as tax incentives. Those which tend to be rejected are the regulatory type of intervention, where the government determines directly how the incentive should affect actual company decisions. This explains the preference, among both large and small companies, for tax incentives rather than outright cash grants which would give government the leverage to control the locality, type and pace of exploration.

Social and economic goals

Another area where the differences between the Discussion Paper and its critics are focused is the issue of social and economic goals. The quest for a satisfactory balance between social and economic goals is symptomatic of the tensions underlying the entire Discussion Paper, which attempts to touch all bases and to please everyone. The idea of 'maximization of returns to labour and capital - without compromising on social objectives' is an innate contradiction. Policies which offer benefits almost inevitably incur costs.

What seems to have occurred is an uneasy compromise between different priorities on the issue of the primacy of social or economic goals. The industry respondents are also inconsistent in that, in principle, they accept the importance of social goals but argue that economic goals are the prerequisite. However, when confronted by specific situations, such as the losses that the withdrawal of northern benefits would have implied, they are not above justifying that policy by its social goals.

Policy opportunities

The recession of the late 1970s and early 1980s jolted governments throughout the industrialized world, and gave them cause to think about their role in the economy, the limits of what they can achieve there, and the necessity of sheltering themselves from too much responsibility for economic disasters and recessions.

This drawing back by governments, including the Canadian government, provides the private sector with a unique opportunity to get more involved in the policy-making process. The private sector can now take governments at their word, and participate. Electorates, too, are supporting more private sector involvement and policy initiatives which will tend to make economic goals primary: and this is occurring even at a time of record unemployment. But the private sector will not be handed its policy-making role on a silver platter: it will have to actively seek it out. It will have to make a serious bid for a relationship of sustained policy consultations, not only with the relevant line Minister, but also by providing ongoing policy input to the central agencies and cabinet Committees.

The policy-making process is basically an adversarial one, with industry and government representing distinct interests, though they tend to overlap at times. But even when there is little overlap there is ultimately a shared interested in the formulation of a coherent mineral policy, with strategic goals and priorities, however difficult this is to achieve. A policy in which no one achieves all of its goals is still preferable to *ad hoc* response to each stimulus as it arises.

For the Canadian mining industry to aspire to such an upgraded role in policy formation, it has to face the central issues of government intervention and the balancing of social and economic goals in a mature way. Its role needs to become less that of a supplicant and more of a real contributor to strategy.

Government, for its part, has to live with the multiple limitations and constraints surrounding attempts to formulate a coherent overall mineral policy. It has to establish a hierarchical list of priorities; and when actions have to be taken that are in conflict with these priorities (as will inevitably happen), such actions should be recognized as either:

a) a necessary and temporary deviation, requiring steps to avoid a recurrence; or
b) an indication that the overall hierarchy of priorities needs revising.

Of overriding importance, than, is establishing a consistent set of hierarchically organized strategic principles to evaluate and act on individual policy issues: a Policy to determine policies.

The real issue for Canadian mineral policy is how various interests are to be reconciled without merely attempting to average them, and which priorities will be chosen as paramount. Such balances as can be achieved cannot be determined *a priori*, nor can they be cast in stone. Policy, while it cannot be made according to blueprints and precise longterm planning, must aim at stability and coherence. This is not, of course, to deny that the industry will have to continue to live with a multitude of uncertainties. These will include the usual problems such as international competition, low prices and the high risks of exploration. They will also include the uncertainties created by Canada's increasingly more demanding political and social environment. There are obviously very definite limits on the amount of stability the industry can reasonably expect, and the government can feasibly provide.

The difficulties are legion, but that is no excuse for an abdication by any of the interested parties. The contribution by both the Discussion Paper and its critics, though at times acrimonious, at least indicates that many of those who continue to debate the issue have not totally given up the quest for a coherent mineral policy.

Appendix 1

List of Responses Quoted in this Study*

B.C. Chamber of Commerce, 'Brief concerning the federal Mineral Policy Paper', February 23, 1983.

B.C. and Yukon Chamber of Mines, 'The Decline of the Canadian Mining Industry during the 1970s', May 1983.

Falconbridge Limited, 'Comments on Mineral Policy-A Discussion Paper', May 1982.

Inco Metals Company, 'Comments on Mineral Policy Review background Material', July 1981.

Mountain Minerals Company Limited, 'Mineral Policy: A Discussion Paper', May 31, 1982.

Noranda Mines Limited, 'Comments on the Mineral Policy Review', July 1981.

OMNR, 'Memorandum on Federal Mineral Policy Discussion Paper', May 18, 1982.

Placer Development Limited, 'Response of Placer Development Limited to the Mineral Policy Discussion Paper: A Placer Task Force on Mineral Policy', July 22, 1982.

PDA, 'Brief on Mineral Policy: A Discussion Paper', May 11, 1982.

Vancouver Board of Trade, 'Comments on the Mineral Policy Discussion Paper', August 1982.

* Other responses were also consulted. Some were given to the Centre for Resource Studies in confidence and cannot be cited, either here or in the text.

THE AUTHOR

David Yudelman was born in South Africa and educated there, at the London School of Economics, and at Yale University, where he received a doctorate. He worked as a financial journalist in South Africa and on Fleet Street, as an investment analyst, and as a lecturer in political studies. Dr. Yudelman published a book on the South African mining industry before taking up his present position as Senior Research Associate at the Centre for Resource Studies in Kingston in 1982.

THE CENTRE FOR RESOURCE STUDIES

The Centre for Resource Studies (CRS) was established in 1973, under the sponsorship of Queen's University, the federal Department of Energy, Mines and Resources, and The Mining Association of Canada, to carry out a program of research and publication on mineral policy issues.

The Centre provides opportunities for multidisciplinary research in resource studies at Canadian universities, furnishes reliable information on matters related to mineral resource policy, and promotes closer liaison between government, industry and other concerned groups. The research program is carried out both at the Centre and by means of contracts with qualified investigators, usually at Canadian universities. Small exploratory studies are also funded, through a system of grants-in-aid of research. CRS Seminars involve representatives from governments, industry, universities, labour, and other interested groups in working sessions on issues of current concern. Through this program of research and seminars, and the resulting publications, the Centre contributes to informed discussions and a better understanding of significant issues.

The Centre is governed by a board of directors which establishes general policy and priorities for research. The board has sixteen members, appointed by Queen's University, The Mining Association of Canada, and the federal government. Guidance on the research program, together with discussion of policy issues and other matters, is provided by the Advisory Council. This body comprises all researchers associated with the Centre, together with members appointed from such groups as governments, industry, labour, and other interests. A Research Advisory Committee aids in the development of projects and the selection of research proposals. The executive director and staff are responsible for the work of the Centre within this framework.

Most of the funding for the Centre's activities is provided by the sponsors. In addition, the Centre accepts contracts from other organizations interested in mineral policy research.

The Centre welcomes comments on its publications, proposals for research projects or for publication, or enquiries about any aspect of its work. For further information, contact:

Centre for Resource Studies
Queen's University
Kingston, Ontario, Canada K7L 3N6
(613) 547-5957

CRS PUBLICATIONS

Monographs and Collections

Conflict and its Resolution in the Administration of Mineral Resources in Canada, by R.M. Burns; 62 pages, 11 tables. Published 1976.

The Impact of the Mining Industries on the Canadian Economy, by R.W. Boadway and J.M. Treddenick; 116 pages, 15 tables. Published 1977.

The Transportation Impact of the Canadian Mining Industry, by A.I. Wallace; 154 pages, 17 tables. Published 1977.

Human Resources in Canadian Mining: A Preliminary Analysis, by J.A. MacMillan, G.S. Gislason, and S. Lyon; 174 pages, 48 tables. Published 1977.

Health and Safety in the Canadian Mining Industry, by G.W. Gibbs and P. Pintus; 248 pages, 58 tables. Published 1978.

The Canadian Nonferrous Metals Industry: An Industrial Organization Study, by E. Urquhart; 158 pages, 18 tables. Published 1978.

Economic Impacts and Linkages of the Canadian Mining Industry, by P.E. Nickel, et al; 140 pages, 31 tables. Published 1978.

Environmental Impact of Mining in Canada, by E.A. Ripley, et al, 274 pages, 45 tables. Published 1978, reprinted 1982.

Effects of Taxation on Base Metal Mining in Canada, by B.W. Mackenzie and M.L. Bilodeau; 188 pages, 29 tables. Published 1979.

Gold: The World Industry and Canadian Corporate Strategy, by E. Cousineau and P.R. Richardson, 192 pages, 32 tables. Published 1980.

The Impact of Policy Change on Decisions in the Mineral Industry: The Case of Exploration in Manitoba, 1969-77, by B.E. Owen and W.J. Kops; 116 pages, 8 tables. Published 1980.

The Role of Mineral Taxation in Industry/Government Conflict: The Case of the Saskatchewan Potash Reserve Tax, by David L. Anderson; 135 pages, 41 tables, 2 illustrations. Published 1981.

Profitability in the Canadian Mineral Industry, by Charles H. Pye; 178 pages, 42 tables, 12 illustrations. Published 1981.

Foreign Investment Control in the Canadian Mineral Sector: Lessons from the Australian Experience, by David L. Anderson; 180 pages, 22 tables. Published 1983.

Financing Canadian Mining in the Eighties: Strategies for Action, edited by David Yudelman; with papers by B. Bradley, A. Dorland, J. Erola, P. Gillin, P. Glenshaw, S. Greenwald, B. Kalymon, P. MacCulloch, B. Mackenzie, K. Murphy, A. Powis, R. Sultan, and D. Yudelman; 240 pages. Published 1984.

Proceedings

No. 1 Rate-of-Return Taxation of Minerals, with papers by B.W. Mackenzie and M.L. Bilodeau, P.M.T. White, N.D. Olewiler, J.T. Cawley, and E.P. Gush; 109 pages. Published 1978.

No. 2 International Competition and the Canadian Mineral Industries, with papers by H.C. Armstrong, H.T. Fargey, C.G. Miller, N.D. Olewiler and P.R. Richardson, D. Perlstein, and K.C. Hendrick; 109 pages. Published 1978.

No. 3 Current Concerns in Mineral Policy, with papers by C.R. Archibald, W.J. Barbour, D.B. Brooks, J.S. Dowsett, J.M. Fleming, and G.A. Jewett; 75 pages. Published 1978.

No. 4 Canada's Mineral Trade: Implications for the Balance of Payments and Economic Development, with papers by B.W. Wilkinson, D.J. McCulla, J.G. MacKinnon, A.G. Balogh, and W.G. Chambers and J.S. Reid; 113 pages. Published 1978.

No. 5 Employee Relations Initiatives in Canadian Mining, with papers by W.J. Bennett, F.R. Nogas and J.P. Fulcher, W.F. Clarke, S.B. Jones, T.F. Cawsey and P.R. Richardson, and P. Warrian; 85 pages. Published 1979.

No. 6 Junior Mining in Canada: The Problem of Investment and Securing Fair Returns, with papers by A.J. Freyman, B.A. Kalymon, J.D. Mason, D.W. Scrim, E.H. Neave and P.R. Richardson, and E.G. Thompson; 101 pages. Published 1979.

No. 7 The Future for Junior Mining in Canada, with papers by Hon. J.A.C. Auld, J.L.C. Lyndon, N.B. Keevil Jr., D.G.C. Menzel, H.T. Fargey, A.J. Freyman, Hon. R. Hnatyshyn, J.C. Baillie, D.W. Scrim, J.P. Bunting, E.H. Neave and P.R. Richardson, L.A. English, M. St-B Harrison, R.H. Grasley, and Hon. F. Drea; 125 pages. Published 1979.

No. 8 Mining-Linked Diversification of the Sudbury Basin Economy, with papers by D.C. Frith, J.P. Reny, A.I. Wallace, J.H. Holtby and L.C. Kitchener, 53 pages. Published 1980.

No. 9 The Changing Structure of the Canadian Mineral Industry, with papers by I.A. Stewart, R.F. Mikesell, R. Simeon, R. Keyes and J.M. MacLeod; 105 pages. Published 1980.

No. 10 Northern Mining in the 80s, with papers by Hon. G. Braden, R.J. Cathro, D. MacKinnon, J. Smith, R.W. Stephenson, B.E. Novak, E.N. Doyle, J.R. Witty, J.E. Marshall, A.G. Gordon, J. McCormack, H.B. Hicks, J. Zigarlick, T. Shearcroft, W. Kupsch, J. Stabler, and Hon. J. Erola, 110 pages. Published 1980.

No. 11 Skilled Manpower Shortages in the 1980s: Towards a Cooperative Solution, with papers by R.J. Gray, J.S. Reid, W.H. Digby, J.B. Hopkinson, A. Knoll, O. Tremblay, G. Betcherman, P.E. Womersley, M.J. Alton, V.C. Allman, C. Stairs, E.J. Weiss, and W.E. McBride; 116 pages. Published 1981.

No. 12 Acid Rain Controls and the Economics of the Canadian Nonferrous Mineral Industry, with papers by J. Gerin, W.G. Deeks, P.R. Clarke, J.B. Hyne, H.T. Fargey, B.W. Mackenzie, and E.J. Ward; 90 pages. Published 1982.

No. 13 Mineral Policy Formulation: The Role of Scientific and Technical Knowledge, with papers by G.A. Jewett, H.D. Drechsler, P.G. Halkett, D.E. Bond, D.C. Findlay, W.G. Jeffery, L.G. Bonar, D.W. Davis, and J. Zwartendyk; 135 pages. Published 1982.

Working Papers

No. 3 Provincial Mineral Policies: Newfoundland, 1949-75, by M.J. Prince, 67 pages, 7 tables. Published 1977.

No. 6 Provincial Mineral Policies: Saskatchewan, 1945-75, by R.C. Murray; 64 pages. Published 1978.

No. 8 Federal Mineral Policies: 1945-75, by M.J. Wojciechowski; 85 pages, 21 tables. Published 1979.

No. 9 Trends in Canada's Mineral Trade, by B.W. Wilkinson, 63 pages, 27 tables. Published 1978.

No. 10 Canada as a World Zinc Producer: Prospects to 1980, by N.D. Olewiler, P.R. Richardson, and L. Rimble, 22 pages, 12 tables. Published 1978.

No. 11 A Survey of Resources and a Production Cycle for the Nonferrous Metals, by C. Lafkas and J.G. Paterson, 34 pages, 9 tables. Published 1978.

No. 12 Solar Energy and the Canadian Mining Sector: A Demand Forecast, by J.S. Shewchun and D.B. Curtis; 45 pages, 14 tables. Published 1978.

No. 13 Cerro Colorado: A Case Study of the Role of Canadian Crown Corporations in Foreign Mineral Development, by C.G. Miller, N.D. Olewiler, and P.R. Richardson; 44 pages, 5 tables. Published 1979.

No. 14 The Administration of Mineral Exploration in the Yukon and Northwest Territories, by K.A. Graham, R.G. McEachern and C.G. Miller; 42 pages. Published 1979.

No. 15 Public Policy Aspects of Information Exchange in Canadian Mineral Exploration, by D.O.Downing and B.W. Mackenzie, 52 pages. Published 1979.

No. 16 Canada's Competitive Position in Copper and Zinc Markets, by B.W. Mackenzie; 41 pages, 21 tables. Published 1979.

No. 17 Constitutional Change and the Mineral Industry in Canada, by Wendy MacDonald; 66 pages. Published 1979.

No. 18 An Economic Analysis of the Canadian Taxation of an Integrated Mining Company, by Jean-Thomas Bernard; 112 pages. Published 1980.

No. 19 Looking for the Improbable Needle in a Haystack: The Economics of Base Metal Exploration in Canada, by B.W. Mackenzie, 48 pages. Published 1980.

No. 20 The Market Price of Risk in the Canadian Mining Industry, by H.F. Campbell, 29 pages. Published 1980.

No. 21 Public Affairs and the Minerals Industry: Junior Mining; Northern Development; Loans for Foreign Mines; A Public Relations Strategy, by C.G. Miller; 42 pages. Published 1980.

No. 22 Newfoundland Mining Industry: Present Status and Potential for Expansion, by N.D. Olewiler and C.H. Pye; 208 pages, 83 tables. Published 1980.

No. 23 Effects of Water Pollution Control Costs on Base Metal Mining in Canada, by N.A. Papanicolaou and B.W. Mackenzie; 74 pages. Published 1981.

No. 24 The Costs of Uncertainty: Regulating Health and Safety in the Canadian Uranium Industry, by I. Robinson; 74 pages, 3 illustrations. Published 1982.

No. 25 Economic Guidelines for Small Mineral Deposits/ Directives économiques relatives aux petits gisements, by B.W. Mackenzie and M.L. Bilodeau; 66 pages, 12 tables, 14 illustrations. Published 1982.

No. 26 Effects of Public Policy on Investment Demand: The Case of Taxation in Canadian Base Metal Mining, by B.W. Mackenzie and C.H. Pye; 58 pages, 17 tables, 11 illustrations. Published 1982.

No. 27 The Prospects for Canadian Uranium, by S. Salaff; 50 pages, 9 tables. Published 1983.

No. 28 Economic Mineral Exploration Targets, by B.W. Mackenzie; 72 pages, 3 tables, 19 illustrations. Published 1984.

No. 29 Dominant Government Firms in an Oligopolistic Industry: The Case of Saskatchewan Potash, by F. Flatters and N. Olewiler; 43 pages, 3 tables. Published 1984.

Technical Papers

No. 1 Financing and Stabilization Policies in a Cyclical Industry: The Case of Inco in the Seventies, by W.T. Cannon; 200 pages, 33 tables, 12 illustrations. Published 1981.

No. 2 Economic Effects of Smelter Controls on the Canadian Nonferrous Mining Industry, by B.W. Mackenzie and M.L. Bilodeau; 162 pages, 44 tables, 16 illustrations. Published 1982.

No. 3 Secondary Supply of Copper and Ferrous Metals and Canadian Metal Markets, by K. Stollery; 138 pages, 24 tables, 16 illustrations. Published 1983.

Mineral Policy Updates

Mineral Policy Update 1981, by Margot J. Wojciechowski and C.E. McMurray; 85 pages. Published 1983.

Mineral Policy Update 1982, by Margot J. Wojciechowski and C.E. McMurray; 88 pages. Published 1983.

Eastern Arctic Study
(Published jointly by the Centre for Resource Studies and the Institute of Local Government)

The Inuit Land Claim, Constitutional Development, and Local Government Reform in the Northwest Territories: An Overview, by Katherine A. Graham and Anne B. McAllister, 50 pages, published 1981.

Industrial Development in the Eastern Arctic Study Area: A Preliminary Overview, by C. George Miller, 31 pages, published 1981.

Eastern Arctic Study Case Study Series: The Alaska Native Claims Settlement, by David Baker, 100 pages, published 1982.

Eastern Arctic Study Case Study Series: Mineral Exploration in the Baker Lake Area, by Anne B. McAllister, 58 pages, published 1982.

Eastern Arctic Study Case Study Series: The Development of the Polaris Mine, by Katherine A. Graham, 61 pages, published 1982.

Eastern Arctic Study Case Study Series: The Nanisivik Mine, by Margot J. Wojciechowski, 62 pages, published 1982.

Eastern Arctic Study Annotated Bibliography, by M.P. Sharon Brown, 74 pages, published 1984.

POOR

QUALITY

ORIGINAL